THE FIRST COMPLETE GUIDE TO THE NEWEST TREND IN VEGETABLE GARDENING!

LANCER LARCHMONT BOOKS

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GROWING MIDGET VEGETABLES AT HOME

GRANT & HOLLY GILMORE

Full-Color Illustrations

GROWING MIDGET VEGETABLES AT HOME

Waiting for you here is everything you need to know to grow a successful garden of these amazing new midgets—where to get the seeds, how to plant them, grow them, harvest them and even how to cook them!

The authors tell you how to distinguish the good bugs that help a gardener from the bad bugs, and how to make simple, organically safe insect sprays right in your kitchen with everyday materials.

Whether your garden is no more than a pot of chives and one of those gem-like little tomato plants in a sunny window sill—or so large that it can supply a roadside stand—you will find GROWING MIDGET VEGETABLES AT HOME not only fun, but economical too!

To Barbara L.

GROWING MIDGET VEGETABLES AT HOME

Grant & Holly Gilmore

LANCER BOOKS NEW YORK

A LANCER LARCHMONT BOOK

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GROWING MIDGET VEGETABLES AT HOME

Chapter 1

Meet the Wonderful Midgets

A few years ago we'd have said nobody would ever be apt to make a house pet of a tomato plant. But that was a few years ago. Today well, one couple we know has *two* pet tomatoes, each growing in an eight-inch clay pot on a south window sill of their apartment. His and Her tomatoes. The neat, bushy little plants are not much taller than this book, and loaded with cherry-sized fruits in flashing red and jade green. They could be tiny twin Christmas trees. And as if being ornamental isn't enough, these tomatoes are eating tomatoes too, and good ones. Imagine—living in a brick and steel upthrust in a swarming big city and harvesting your salad's crowning touch on your window sill.

Now, in our own case, with all kinds of space, a big country garden, why would we grow this very same little tomato in it? Two good reasons. We wanted a nice compact edging around a bed of marigolds, and we appreciate good food wherever we find it.

This little tomato's name is Tiny Tim. Tim is one of a growing class of bright new little vegetables called *midgets.* These little plants range in size from about half as big as their standard-sized cousins, to one-fifth or less. Besides tomatoes, there are more than a dozen other midget vegetables, including cucumbers, squash, corn, beets, turnips . . . all easy to grow from seed—and more are on the way. They're the darlings of those lucky home gardeners who have discovered them.

The entire midget vegetable plant is small. They are natural midgets, you see, bred to be small, stay small, and to come true to type from seed. And they taste good, some of them being so prized, their fans call them the garden's gourmet dainties.

Why people plant midgets.

As we indicated by our own example, though the midgets take less space than their standard-sized counterparts, this is by no means the only reason for planting them. Consider these other advantages they offer, and see which of these might be just right for you:

- A big reason for growing some midget vegetables is their earlier maturity. This is so important to gardeners in short-summer climates that it may make all the difference between having a certain crop and never having it. A good example is watermelon. Standards take from 11 to 13 weeks of warm weather to ripen –and unless a watermelon is really ripe it's a failure. But if your summers arrive late and then end even a week short for ripening watermelons that you've hopefully grown, all you've had from them—as an old farm expression puts it—is their company. But there are new midget watermelons now that have closed that ripening gap for many northern gardeners. The neat little things come to their ripe peak of perfection in just 10 weeks—and one even changes color, to tell you when it's ready.
- The smaller size of midgets makes them an ideal choice when the standard-sized vegetable is just too much. If the usual eggplant is more than you really want at one time, for instance, how about one that is perfectly ripe at half that size? Also, smaller vegetables may better fit smaller appetites or smaller families. The midget cabbages are good examples here, some being a mere 4″ wide, providing two nice servings and no problem of leftovers.

- Is your garden too small for you to grow as many different vegetables as you wish you could? Think midget; with them you can grow more kinds of vegetables in the same space. Additionally, a garden of midgets will avert the problem of an overwhelmingly large, often surplus harvest of any one vegetable, providing, instead, a greater variety for your menus. A good for-instance is cucumbers. We've raised standard ones that ran us ragged keeping up with their production. You can't have cucumbers three meals a day, and even if we were passionate about pickles, there are other things in life. But now we have midget 4-inch cucumbers, borne on short little vines, and just productive enough.
- The charm of the miniature needs no pointing out, nor does the pure fun of growing these interesting littler vegetables—and as you might expect, this is what also makes midget vegetable growing vastly popular with children. They love the wee things. If your child thinks carrots are strictly for the rabbits, wait until he personally grows a Tiny Sweet, just 3 inches of crisp sweetness. To hear him tell it afterward, you'll think he invented carrots. In fact you won't even have to try to figure out how to pep-talk your young ones into a gardening project with midget vegetables, once they find out about them. Just get ready to adore what they grow. And that will be easy.

Do you grow midget vegetables differently?

"What kind of fertilizer do I use on midget vegetables?" someone asked us recently, and another wanted to know what kind of soil or soil mixture to use. The answer to both questions is: the same as you'd use for the same vegetable in standard size. The midget's difference is its size only. But this means it needs less of almost everything. Less space, less fertilizer, less water.

We have noticed that the smaller space needed by midgets makes them highly appealing to an extraordinary variety of gardeners. Children love them, as we said, but at the other end of the scale, elderly couples who have left big houses and yards for retirement cottages and mobile homes on tiny plots are delighted with the prospect of still being able to have a vegetable garden. And midget vegetables are suddenly opening new horizons of possibility to those who live where they have no contact with the earth the condominium and apartment people—but who can see possibilities now in "flower-pot farming." We'll go into this specialized sort of vegetable gardening in Chapter 5.

What midget vegetables can you get?

Seventeen kinds of true midget vegetables have been developed so far, and their seeds are on the market. In some cases several varieties are available, as with tomatoes. Other kinds of vegetables are being worked on, so you can expect to find new ones showing up as time goes on. At present you can buy seeds of these midgets: beets (a Holland-bred tiny, only 1 inch wide), cabbages (several, in more or less softball sizes), cantaloupes (luscious little orange-fleshed ones not much bigger than a peach), carrots (some tapered, some almost round), sweet corn (both white and yellow kinds, on 4-inch ears), popcorn (including a little red type valued for its eye appeal), cucumbers (some no longer than your finger, ideal for pickling), eggplants (half the size of standard kinds, on sturdy little plants), kale (a miniature so pretty it can be potted for indoor decoration), lettuce (beautiful little buttery heads, like hearts of bibb), peas (a heavy-producing bush type only 6 inches tall, and some beautifully flowered edible-podded climbers), peppers (midget-fruited and stan-

dard-sized-fruited ones, both on dwarf plants), pumpkins (one is a mere 6 inches wide, another has seeds you can eat), squash (winter ones, tiny and richly sweet), tomatoes (from some with cherry-sized fruits, to others bearing fruit the size of small apples, and some plants less than a foot high), turnips (a fast-growing one about 1 inch wide), and watermelons (several good varieties, on short little vines).

This provides a pretty well-rounded selection of vegetables for a little home garden, and the midgets also span the entire growing season, from peas in the spring, through tomatoes and cantaloupes in summer, to the final pumpkin and winter squash harvest of late autumn.

We should mention something else at this point. When you get to Chapter 4, on how you grow the vegetables, you'll find we cover, besides these seventeen midgets, an assortment of other vegetables that are not midgets, but are so small or can be grown so small, that they deserve your attention. In this way you can grow a midget garden with about as fine a spread of delicious and good-for-you things to eat as any size garden could offer.

Where to make your midget vegetable garden.

Now then, let's say you are just about to start a vegetable garden, in order to grow some midget vegetables. If you already have a vegetable garden, what we say here may not be anything you don't already know; in that case you might want to skip this part. But if you are just starting, here are the main things you'll need to know.

- *Location:* A good old term for a vegetable patch was "kitchen garden," and it has earned a right to revival. Within reason, the closer your little garden is to the kitchen, the better. The farm families in our countryside all know this from generations of experience, and we've always been interested in noticing how close to the house they plant the vegetable garden. One of the best things about growing your own vegetables is getting truly fresh flavor and nutrition, and nearness to the kitchen helps here. You have to take the nutritionists' word for the plus values of garden-fresh food, but you can test the flavors for yourself. When we have visitors, especially from the

city, we take them on a tour of the garden if it isn't the very snowy heart of winter, and we like to watch their faces when they accept our invitation to taste a freshly shelled pea, or a lettuce leaf pulled at that moment from a growing plant. First they look blank, a what-*is*-this-I'm-eating look, and then they look incredulous and impressed and delighted all at once. For it's true—a vegetable this fresh is a *different* vegetable from the one at the market that most people have eaten all their lives. Taste and be convinced.

• *Light:* If a garden can get sun all day long it will be happy. But it will also be reasonable about it if this isn't quite possible. The practical minimum is 6 hours of sun, preferably in the middle part of the day. If you can't promise your garden this (though you won't be blamed for occasional cloudy days, of course), you can still raise leafy greens such as lettuce, with less sun or in partial shade, which means something like dappled sunlight that shines through leaves. The root crops, such as carrots, are also likely to accept partial shade. But trying to raise the fruiting vegetables, such as tomatoes and peppers, in anything but full sun isn't worth your time or theirs. In Chapter 4, on growing the vegetables, we discuss this more fully.

• *Air:* A garden wants ventilation. A breezy location (not in a blowing gale, though) will do this. So will a sloping site, because as air cools, it flows downhill, setting up a current. And if the slope is downhill toward the south, this will also give the garden another advantage: the springtime sun falls on such a slope a little more directly than on a level surface, which raises the temperature, and this helps get early crops off to a prompt start. This difference works just as well for a midget garden as for a 40-acre field. You can even tilt a flat toward the south by putting a brick under the north end, and get the same good effect in early spring.

• *Competing plants:* If you make a garden close to a big tree the tree will do its best to get the garden's food and water. So will any other plants nearby, such as those in a hedge, or ornamental plantings such as shrubs. But trees

are usually the big menace. Their feeder roots are supposed to reach out in the earth as far as the branches do in the air. The roots generally reach a few feet further, though. A strenuous but workable solution to this fine how-do-you-do is to dig a narrow trench 3 feet deep between the garden and the tree. As you dig, you cut the tree roots. Then line one entire side of the trench with galvanized sheet metal, from the bottom of the trench to the top, and refill the trench with earth. This root-pruning won't hurt the tree, and it will take it years to work its way past the metal barrier.

To be perfectly fair, let's add that we like trees even though we may not sound like it. And trees and hedges are sometimes welcome windbreaks for a garden in a quite windy location. Also, birds dote on trees, and birds around a garden are a help in keeping down some pestiferous insects.

- *Good soil:* This is an important point, but in a small garden soil can be improved without a shockingly big expense. We'll go into this more fully a little further along, but in a nutshell, good soil that is fertile (if a grand crop of weeds is flourishing in it, you can assume it is fertile), is fairly deep (a foot of topsoil, the darkish upper layer, and two feet of subsoil under it before you hit rock would be very nice, but don't expect it), and is friable (crumbly and willing to become a non-lumpy bed where seeds can sprout easily and root well).
- *Good drainage:* This refers to the drainage of water *through* the soil, not over it. A heavy clay soil, which we happen to have, drains so slowly it would be impossible to garden in it if we didn't add a lot of compost. And a very sandy soil would drain so fast it couldn't be gardened either, without adding lots of compost or some other forms of organic matter. From this you can safely assume that compost, which we'll take up in Chapter 2, is very, very important. Helping drainage is one of its functions.

But if a soil is really quite soggy, even compost can't do the job alone, and sometimes drain tiles are installed underground and on a slight slant so that ground water seeping up into them will flow away and empty into a

ditch or other channel provided for this purpose. This tiling is an engineering job if it is going to be done right. Even then it may work perfectly or not at all. A popular alternative in recent years has been to build raised beds by piling earth high enough in flat-topped beds, or enclosed in frames, for plant roots to grow downward as much as they need to, without reaching the soggy stratum. A pile a foot high will take care of most midget vegetables.

• *Access to water:* The water in this case is from your faucet. If you could depend on getting an inch of rain each week of the growing season, your garden would be watered without your having to lift a finger. But since you must do the watering when the rain doesn't do it, a water line conveniently near the garden is more necessity than luxury. Dragging a hose or toting buckets of water from around the far side of the house can make you wish you'd got interested in collecting stamps instead of in gardening.

• *No pollution:* City smoke and smog are hard on plants, stunting them and even killing some. Even in the country one can run into the effects of automobile exhausts on a garden, so if your garden site is along a busy road or street, carbon monoxide can be a villain. A solid fence between garden and street will help, if you can't change sites.

• *Convenience to supplies:* Like a water faucet, gardening supplies should be close to the garden. This refers to tools, sacked supplies such as fertilizers, and any bulky deliveries such as topsoil. A small shed or box to hold some items may be an answer for some of these items, and an open space alongside the garden where bulky materials can be unloaded is perfect.

• *Ban to animals:* A fence around a garden will protect it from some damage by animals, stray and non-stray dogs being the most frequent offenders. In windy spots a fence helps protect the garden from being blown about, and will also serve as a support for cucumbers or climbing peas along the garden's north boundary—north, so the vine won't throw a shadow on other garden plants.

If a fence is out of the question—and it often is in the case of the mini-mini garden that may be no bigger than a beach towel—do this: Drive sticks in the ground at each corner of the garden, and drape nylon netting over them. Garden stores sell this netting, which is used to keep birds from eating fruit on trees before the owners can eat it. Use enough netting to make a cage over your little garden. And if birds are a problem, as they sometimes are with small, tender plants, the net cage will do more for you than a fence will.

• *Garden map:* Once you've decided where your midget garden is going to go, draw a map of the site on paper, even if the site is a very small one. The map needn't be more than a rough sketch, but it is best to draw it to scale, such as ½ inch representing 12 inches. Indicate which way is north, and when you block out on the map where you are going to plant each vegetable, be sure to put the tallest plants furthest to the north or west, then the next tallest in front of them, and so on, to keep the tall plants from shading shorter ones.

Such a map will also show you ahead of time what you have room for in the garden. You can crowd most vegetables, especially midget vegetables, but there is a limit to how close together plants will grow well. This is something you learn best by doing; and although there are all sorts of rules laid down about gardening, it is in this way that you learn which ones you can break and still succeed.

When you make your map, allow room for paths unless the area is so small that you can reach the middle from each side. The paths can be quite narrow, only 12 inches wide to save space, and you can save more space by edging them with carrots, which make a ferny border, or with a

low-growing herb such as thyme.

Also, if you have the room, reserve a spot about 3 feet square in or adjoining the garden. This is for your compost pile, and we'll go into this in Chapter 2. Also, if you are quite short on garden space, we'll tell you there how to make a successful mini-compost pile.

Your garden soil and what to do about it.

You can start off by being pretty sure your garden soil will grow some vegetables. Few soils won't grow *something*. What you do for the soil from this point on will decide how many kinds of vegetables it will support and how well it will grow them.

• *Soil cross-section:* If you wonder how to find out what your garden soil is like down below, where you can't see it, you can do what a soil expert would do if you called him in as consultant. He'd dig a hole. Simple? By looking at the side of the hole, he'd see a cross-section of your garden soil. That would tell him two important things at once: how deep your soil is, and what it is made of.

"How deep" means how far down it is to rocks. For midget vegetables, 3 feet would do nicely and 2 feet would suffice. The deeper the better, of course. The top layer of this two or three feet, the topsoil, will be darker than the subsoil under it. This is because the topsoil is formed partially of organic matter, and organic matter (decayed plant and animal remains and wastes) is naturally brown or blackish. There is nourishment for plants in subsoil too, but the organic matter in topsoil is necessary for, among other things, the existence of micro-organisms that turn nutrients into forms the plants can use. Let's suppose you now place a ruler on the side of your hole in the ground and discover you have 4 inches of topsoil. Not bad. Six inches would be better, but many soils have only 2 inches or less.

• *Sandy-clayey:* The other things the hole would tell your soil expert is how sandy or how clayey your topsoil is. A simple, old-fashioned way to test for this is to barely moisten some of the soil, then squeeze a handful of it, and

open your hand. If the lump shows the indentations of your fingers clearly, keeps its shape even when you let it fall, and generally looks like earth-colored putty, you've got a heavy clay soil. It will hold moisture and it will feed plants, but it won't drain properly (sometimes hardly at all), and when it dries out it will harden like flint.

If, on the other hand, instead of tenaciously holding its shape when you squeeze it, the handful of earth falls easily apart when you open your hand, you've got the other extreme, a very sandy soil. It will dry out too fast, and plants won't get much nourishment from it. An in-between soil, a so-called sandy loam, is what you want, or would like very much to have. When moist, it will hold its shape on your palm, but will fall apart when you drop it. Rub it between your fingers and you'll feel the combination of clay slipperiness and sand grittiness.

• *Drainage check:* A hole is also the world's simplest checkup for drainage. Just dig a hole 2 feet deep and fill it to the brim with water. Then time it to see how long the water takes to disappear. If it is all gone in an hour or two, your drainage is all right. Much short of an hour is too fast for the good of your plants, and much longer than two hours is too slow for your plants' good. Too-fast draining means the soil is too sandy, and too-slow draining means the soil is too clayey.

So what do you do to help matters in either case? You add humus to the soil. This same remedy cures both evils, or at least helps enough so that a body can live with them. "Humus" is the organic matter we mentioned previously; the two words are practically synonymous. Farmers used to depend on manure for humus; the usual method today is for them to plow under a cover crop of clover, grass, or something of the kind that was planted expressly for this purpose. Home gardeners can do the same thing, but in a midget garden the best way to get humus is to spade into your soil some such material as peat moss, decayed leaves, straw, sawdust, or—best of all—compost. You do this by spreading a two- to four-inch layer of the humus on the ground and spade it in by lifting each spadeful of soil and humus and replacing it upside down, with the humus now

on the bottom. For a further discussion on humus, see Chapter 2.

• *Earthworms:* A free and labor-saving soil improver is the earthworm. Most garden soils have earthworms in residence, and the more humus a soil has, the better they like it. Earthworms do two chief things of help to gardeners: as they burrow through the earth they loosen it, which helps the roots of plants in their search for food and water; and they enrich the soil with their waste, called castings, and with themselves when they die. This enrichment isn't a big thing but it's a good thing. And if you don't have earthworms you can take it as a sign your garden soil needs more humus. Even if you transport earthworms to poor soil, they'll disappear.

• *Soil test:* This brings us to the question: Should your garden soil be tested, to see if it is right for raising vegetables? A test here means checking on how acid or how sweet (alkaline) the soil is, and checking on what nutrients it may need. You can buy a kit for about $5 and do the testing yourself. There also are soil laboratories that do it for a fee. We carry names of some in the lists at the end of this book, and the yellow pages of your telephone directory will list any local ones under "Laboratories, testing." Or by calling your county agricultural agent at your county seat, you may get a free test or find out where else to go for one.

In much the same way that the percentage of alcohol in whiskey is indicated by the term proof, the percentage of acidity in a soil is indicated by the term pH. A soil with a pH of 7.0 is neutral. Any pH above 7.0, such as 7.5, indicates a sweet soil and any pH below 7.0, such as 6.0, indicates an acid soil. Almost all vegetables will grow in a slightly acid soil—a pH of 6.0—even though various vegetables will grow better in a more acid or less acid soil.

To help you check with your eye if your soil is decidedly acid or decidedly sweet, here are some tell-tale vegetables to observe:

Do poorly in too-sweet soil

Snap beans
Mustard
Potatoes
Watermelons

Do poorly in too-acid soil

Beets
Cabbage
Cantaloupes
Celery
Endive
Peas
Spinach

Since all but a few soils are normally somewhat acid, a too-sweet soil is often one that has been over-limed. The best course here is to work sawdust or sphagnum peat into the soil. To fix a too-acid soil, sprinkle some form of lime on it and rake it in. Crushed limestone is a favored form. Hydrated lime is usually available when others are not. The wood ashes from your fireplace will also do the job, and will add some plant food as well. With limestone or hydrated lime, use enough to whiten the ground lightly. With wood ashes you can spread a quarter-inch layer and rake it in. If you decide to use any of these liming materials, don't do so at the same time you are giving the garden fertilizer or compost, or the liming material will steal some of the feeding value. Instead, do the liming two weeks or more ahead or two weeks or more after.

What tools are necessary?

Good tools make gardening more interesting and less work—just enough good tools, that is. For the mini-mini-midget garden you really don't need more than a trowel and three items from your kitchen: an old knife, a fork, and a

spoon. You can dig with the trowel, transplant with knife and spoon, and cultivate with the fork. That way, you won't complicate your life, and you can take your time deciding if you want something more.

For a little larger garden of midget vegetables, you can get along nicely with this small assortment: a spade with a pointed blade, a rake, a hoe, a spading fork, a trowel, a cultivator, scissors, and a knife. We do a good deal of gardening stooping or kneeling, but if this would bother your back, get a long-handled cultivator instead of a short one such as we use. A sheet or two of sandpaper in your garden box to keep tools scoured will make your work easier and more fun.

Another favor you can do your back, and all your gardening muscles, is to keep an edge on your spade, hoe, and knife. Ask your hardware dealer to recommend a good sharpener.

A cart may be a convenience, and can save you some strain. A child's wagon serves well for this purpose. Sometimes a box fastened to a child's sled is even better, since a load can be skidded over rough ground that wheels can't roll on. A homemade version of this is a box with two short lengths of two-by-fours nailed to the bottom for runners, narrow sides down and the front ends cut on an upward slant the way sled runners curve upward, with a pull rope fastened to them.

A garden box to carry seed packets, garden gloves, row labels and pencil, and other things handy to have nearby is another step-saver. The divided shallow cardboard boxes that berry containers come in are good for this and you can get them free at grocery stores.

If, as we do, you think of gardening as partly exercise, you may wonder which activity does what. Spading is most strenuous, and works out your arms, legs, and chest muscles. Raking exercises your arms and upper back. Stooping with your knees bent strengthens leg muscles. Bending from the waist calls on your back muscles, and helps trim down your waist.

About seeds.

Where can you buy seeds to grow midget vegetables? The best selections are from seed houses that sell by mail. About a dozen of them carry midgets, and in the lists at the end of the book we carry names of these houses. In Chapter 4, dealing with growing the vegetables, we mention the names of the seed houses carrying all the midgets discussed, so you won't find yourself wanting something and not knowing who sells it. All you need is a catalog from the seed houses mentioned.

- *How to get catalogs:* Seed catalogs come out early in January each year. They are usually still available all spring, but by asking early for those you want, you'll be surer to get them. Just send a postcard request with your name and address to any of the seed houses we list. If you order any seeds, you'll automatically get a catalog the following year. Catalogs are expensive to produce, and some are rich with color photos, but none of the seed houses in our list is currently charging for its catalog, though some other seed houses are.

The houses carrying midget vegetables usually group several on a page. Look for "Midget Vegetables" in the catalog's index. Be sure to leaf through the other vegetable pages, though, because midgets are often found there instead of being grouped on the page with the others. (Don't ask us why. They just are.)

- *Seed prices:* Prices of midget vegetables are in line with those of standard size. Nearly all seed houses are now adding a handling charge to each order, midget or not, usually from 25¢ to 50¢. This charge is shown in the order blank enclosed with each catalog. We are always torn between wanting to sample around among the interesting

novelties offered by different houses, and wanting to get the most for our money by dealing with fewer houses and thus paying fewer handling charges. If we forget to order something, or decide we want it later on, it sometimes costs us a handling charge larger than the cost of the seed, so we suggest you learn by experience (ours) and order everything at one time.

• *Storing seeds:* You can also save some money by using seeds from the same packet for two or more seasons. If your midget garden is quite small, a packet of any seed can contain as much as ten times the amount you'll ever use in your most optimistic season. The secret of keeping seeds alive is to keep them *dry*, and to keep them *cool*. We keep ours in the refrigerator, closed in a fruit jar along with a little bag of a dessicant to absorb moisture (drugstores sell them). A crumpled paper towel can pinch-hit for the dessicant.

Most seeds are good for five years, more or less. This includes all the midget vegetables now available. It also includes the others you'll find in Chapter 4. Onion seed and parsley seed are short-lived, though, and we don't hold them past the second season. It is a good idea to seed old seed more thickly than when it is fresh, as the percentage of germination drops with age; if 75 seeds out of 100 sprout from fresh seed of some vegetable, 60 out of 100 may sprout the next year from the saved seed, and 50 out of 100 the third year.

• *Hybrids:* Some midget vegetables are hybrids, which is a point to notice when you read catalogs, and one that we mention as we go through the list in Chapter 4. A hybrid vegetable is almost always a good grower, sometimes faster and sometimes less likely to catch a disease than non-hybrids of its species. Plant breeders produce hybrids by mating two different varieties of the same vegetable, thereby "breeding in" the good qualities of each variety, and "breeding out" the poor, or weak, qualities of each. The child of this mating is the hybrid, and the good points of both parents are joined in it. By the way, if you like to save seeds from your own plants, don't do it with seed that a hybrid plant produces. It will grow, but it

won't grow the same hybrid that the original seed grew, which is called a first-generation hybrid, an F_1. The plant you'll get will be a second-generation, or an F_2, hybrid. Of course, if you're a born experimenter, go ahead and try it, but don't expect more than a little fun out of it. The F_2 generation are generally a lost generation as far as production is concerned.

• *Packets:* Garden seeds nearly always come in paper envelopes, called packets, as they have for years and years. We always pry up the flaps on these packets instead of tearing them open. This makes it easier to see the seeds as we tap them out one at a time, and we can close the packet more securely afterward, to prevent the seeds from spilling.

Most packets carry directions on how to grow the plant, sometimes offering quite a lot of information. Some carry the year the seed was marketed, and if it isn't there, you'd better put it on. Or do so by writing on the packet when you used the seed. Do this each time you use some of the seed from that packet, and you'll have a running record of how old the seed is and how many plantings you've made with it.

Planting your midget vegetable garden.

If you plant a seed outside, in the garden, it will tend, a good deal, to look after itself as long as you don't let it dry out before it sprouts. But if you plant it inside, as you do with tender crops that should get started in spring but cannot take spring's cold spells, such as tomatoes, a little more doing is required on your part. Let's look at it in chronological order.

• *Starting plants indoors:* If you want an early start with tender crops, you can get it by planting them indoors and then moving them outside when the weather warms up. The midget vegetables you would be most likely to do this with are eggplants, peppers, and tomatoes. If you like, you can seed others indoors too, but the three we mention are the ones that will repay you best for the head start, and can use it.

Before you begin, phone the local weather bureau and

ask when the last spring frost usually comes. You can't depend absolutely on the date, which will be an average date from over several years, but it will clue you to when to plant seeds indoors. Let's say the date is April 15. By then you'll want your little indoor-seeded plants to be at least six weeks old, so plant them March 1. Even so, it is necessary to protect them for a while outdoors, or hold them inside for another two weeks or so past the last frost date, until the weather makes up its mind to be bland. We'll explain shortly how you protect them if you do move them outside at about the time of the average last spring frost.

Now, for the indoor seeding, here's what you'll need besides the seeds themselves: containers; a soil mixture; light; and warmth.

• *Containers:* Seeds can be planted in a clay flower pot, or the low clay one called a clay pan. Plants usually do well in them. All clay pots and pans have drainage holes in the bottom, and to keep these holes from clogging, put something over them before filling the pot a piece of broken clay pot, a small rock, a piece of charcoal.

You can also plant seeds in such household things as tin cans, milk cartons, paper cups, and egg cartons. Punch holes in their sides near the bottom for drainage.

There are now a number of plastic and fiber containers on the market; some are versions of the nurseryman's wooden "flat," which is a shallow wooden box, and others are pots. They are lightweight and convenient. Similar trays are used for holding small peat pots or blocks, each intended to accommodate a single plant. Garden supply stores carry many kinds of containers, and so do most seed houses.

• *Drainage:* Before you fill a container with soil, you must see that excess water will be able to drain off when you water the plants later on. If it can't, and the soil becomes soggy, the plants will die. For indoor use, the neatest way to provide drainage is to put a one-inch-deep layer of pebbles, marbles, or broken charcoal briquettes at the bottom of each container and be careful never to water the seedlings heavily. With some luck, no water will drain out, but for safety's sake put a plate, a foil pie pan, or some such catch-basin under the containers.

After you've been looking after your seedlings for a while, you will learn by feel how much water is just enough for them.

• *Planting mixtures:* For filling the containers, you can buy a planting mixture, or mix one yourself.

If you buy it ready-mixed, ask for a seed-starting mixture. Garden stores carry these, and you'll find some listed in seed catalogs. Such mixtures also come in the form of compressed cubes or blocks, as already mentioned; you plant a seed in each. They are a convenience for indoor use, but their particular advantage is in making it easier on the plant later when you move it to its permanent location.

We must add that most of these products, mixtures and compressed mixtures, contain chemical fertilizer rather than organic fertilizer. If it comes to accepting this situation or doing without, we choose to accept it, since organically sensible gardening thereafter will correct matters.

If you decide to mix your own starting mixture, this is a good formula: equal parts of screened compost, garden soil, and builder's sand; peat moss or vermiculite can be substituted for the compost, and in that case add about 1 teaspoon of a fertilizer, such as blood meal, per quart of planting mixture (a 1-pound coffee can holds a quart), and spread a quarter-inch layer of shredded peat moss or vermiculite on the surface of the planting mixture before seeding. The fertilizer is to nourish the seedlings as the compost would do, and the peat moss or vermiculite layer on top is to prevent a fungus disease called damping-off,

which is also prevented by compost in a mixture. Fill containers to within one-quarter to one-half of their tops.

(You'll find some more information on mixtures in Chapter 5, in connection with container planting. Although the formulas given there are intended for growing the vegetables to maturity, they can also be used for starting ones you will be transplanting to the garden later.)

• *Seeding:* Next, plant the seeds. For the three we are talking about—eggplants, peppers, and tomatoes—plant the seeds about 1/3 inch deep. Seed packets carry such information. A good way to get used to judging depths is to make marks on a pencil, ¼ inch, 1/3 inch, ½ inch, and 1 inch from the end, and use it as a measuring stick. When a seed doesn't sprout, it is often because it was planted too deeply; a rule of thumb is: plant a seed three times as deep as the width of the seed.

If you are seeding in a tray or a large pot, plant in rows. Make a row by laying your measuring pencil on the soil and pressing it down to the right depth. Check the depth, then drop the seeds into the row; 2 or 3 seeds per inch is about right for the three vegetables we are dealing with; smaller seeds could be planted closer together. Now fill the row back to level again with some of the planting mixture or with shredded peat moss. Then water the planting gently with a fine spray, or with a tin can into whose bottom you have punched a few dozen small holes.

To plant seeds in small pots intended to hold one plant each, make two or three holes with your measuring pencil, drop one seed in each, fill the holes back to level, and water as with the larger containers. Later, you'll remove all but the strongest plant in each of these small pots.

Seeds don't need light to sprout, but most do need some warmth, generally about 70° F. Of the three vegetables we're dealing with here, the eggplant needs the most heat to sprout -between 77° and 86°. If you are sprouting all three at the same time, an 80-degree tempearture would do nicely. (This is during the sprouting period only, approximately 10 days following the seeding.)

The other requirements for sprouting are air and water. You needn't worry about the air. There will be enough in

the pot soil. As to the moisture, water the container soil after seeding, so that it is damp all the way through, and then you can keep it moist easily by covering it with Saran Wrap or keeping it in a closed plastic bag until the seeds have sprouted and you can see the tiny plants breaking the surface of the soil. Then discard the plastic.

• *Temperature and light for seedlings:* Once the little plants are up and growing, a temperature of about 60° is best for them. The light from a south window is preferred, though seedlings are not as particular about this as are plants in full growth. You can also use lamps instead of daylight, or to supplement daylight. See Chapter 5 for details.

If you are growing the seedlings near a window, they will lean toward it, so turn the containers around every day or so. Be careful also not to place them so close to the pane that they will get chilled, especially at night. A spacing of about 12 inches is usually satisfactory.

If seedlings look pale and spindly, this almost always means they aren't getting enough light, or that the room is too warm for them.

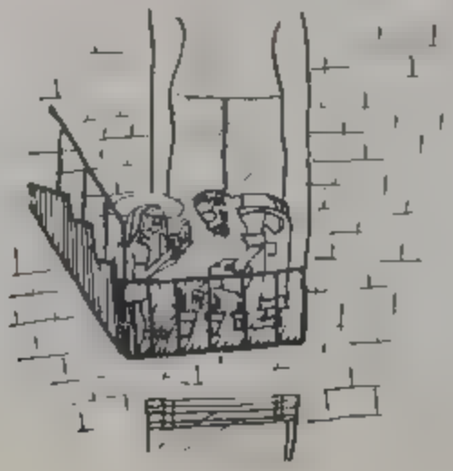
• *Watering:* Giving seedlings too much water is a common mistake. Feel the surface of the soil, and water only if it feels dry. If in doubt, push a sliver of cardboard about ½ inch into the soil and see if it feels damp a few seconds later when you pull it out. If it does, don't water.

• *Thinning:* After the seedlings have grown their second and third pairs of leaves (called true leaves; the first ones are called seed leaves or cotyledons), it is time to remove the plants that didn't grow as well as others, giving the others more room to grow in. This is called thinning, and is most easily done by snipping off with a pair of scissors the unwanted plants at ground level. If you have seeded thickly, or if practically all the seedlings grew well, you may have to snip off some perfectly good ones, because the important thing is to give the survivors room. They need about 2 inches between each plant; in the small pots, leave one plant per pot. After you are used to handling plants, you may want to transplant the best of the surplus seedlings. We'll take up transplanting presently.

• *Hardening-off:* To get your little plants ready to cope with outdoor life, you put them outdoors each day, starting about two weeks before they are due to go to the garden. During this period, give the plants only about half as much water as before; this is to slow their growth, so they can take wind, chill, etc. Make the first airing only about 30 minutes long, and not in a wind or strong sunshine. Work up gradually to all-day airing.

If you have a coldframe, you can put your indoor-grown plants in it, in their containers, and harden them with less work. Keep the frame closed at night for the first few nights and on any unusually chilly night, and don't open it wide during the day for the first few days.

Years ago, home gardeners put tomatoes and other tender plants directly from indoors to the garden by placing fruit jars over them, like little coldframes, one for each plant. This is a labor-saver in a way, and we have used it, but plants under jars can get too warm in bright sun and may have to be given ventilation, and they still need some hardening-off before you take the jar away for good. A simpler way is to use the paper covering called a Hotkap. This is a waxed-paper dome a few inches high. You move your seedling to the spot in the garden where it will stay, water it well, put a Hotkap over it, and let it alone for a few days while the weather is becoming springtime-mild. Then cut a slit in the top of the Hotkap for ventilation, and when the weather is warm enough, remove the Hotkap entirely. These coverings are good for only one use, and cost 6¢ or 8¢ each, depending on the quantity bought, but they do so good a job that they are used by commercial vegetable growers, who are good judges of value.



• *Transplanting:* Moving your indoor-grown plants to the garden, the process called transplanting, is easiest if you have grown them in individual containers, each holding one plant, and easiest of all with peat pots or blocks, which go right into the ground along with the plant growing in them. Two brands of these are Jiffy-Pots, and Fertl-Cubes. Dig the hole a little bigger than the peat pot or block. Tomato plants should be transplanted deep enough to cover nearly all the stem, and eggplants and peppers should go in 1 inch or so deeper than they had been growing. Water plants immediately after transplanting them, and press the earth firmly around them, to settle the roots.

In the case of other containers holding single plants, water them well an hour or so ahead of transplanting. Then run a knife blade down between the side of the container and the soil, all around. Put your hand over the top of the container, with the stem of the plant between your fingers, and turn the container upside down. Pull the container off the plant. You may have to tap the top edge of the container on something such as the corner of a brick to loosen it. A well-grown plant will have enough roots to hold its potful of earth intact as you turn it right side up, supporting it underneath with your other hand. Transplant it in a hole you have ready.

To transplant from trays, flats, or other containers holding several plants, water them an hour ahead of time. Then, with a sharp knife, cut between the plants and all the way down to the bottom of the container, so that each plant comes out with its own block of soil. To take a plant out, slide a trowel under the block of soil, lift the plant and block out of the container, steadying the plant by holding a leaf with your other hand, and transplant as with the single-container plants, into a hole you have ready. Instead of a trowel you can use a spoon or pancake turner to lift the plants. The reason you hold the plant by a leaf to steady it is that holding it by the stem may damage a young plant permanently.

If the plant is well grown it will have enough roots to hold its block of soil, but since you will have cut some

roots when you cut the blocks of soil, these plants are apt to wilt a little. To cure wilting, give shade and water. A good old-time way to shade young transplants is to prune a leafy branch from a hedge or tree, and push it into the soil so that it shades the transplant for a few days. This is why cloudy days are better than sunny ones for transplanting. If shade and watering have not helped the wilting by the next day, cut off about half of each of its large leaves with a scissors. This reduces water loss, and usually stops the wilting.

• *Seeding outside:* For many of you, the place where you are making a garden has never been a garden before. It may be covered with grass, weeds, or nothing. You'll need to spread organic matter on it, as already mentioned, and spade it in, turning any growing plants underneath as you do so. Then you break the clods, and finally smooth the soil with a rake until the top few inches are almost as fine-grained as sand. This is a seed bed. The time to do this job is in the spring, after the soil has dried enough to be cultivated easily. It should feel barely damp, not really wet.

Some gardeners prefer to spade the whole garden in late fall, after the last crops are gathered. They don't rake the soil after spading, but leave it rough over the winter. This is to catch more moisture by keeping if from running off quickly, and to let the weather freeze and thaw the soil repeatedly, breaking it up for easier handling in the spring. We have done this with our clay soil, which benefits from this treatment. But a loose, easily worked soil, rich in organic matter, generally does better with spring spading, and sometimes only raking is needed.

Once you have your garden ready to plant, try not to step on the soil. This compacts it and interferes with the movement of water through the soil and with the well-being of roots. If you have to step on a seed bed, lay a board on it first and step on the board.

• *Garden arrangement:* Now that you've got your garden ready to be populated, get out that garden map we spoke of a while back, and see where things go. Now is the time to decide if you want to plant in rows or in beds. It is

purely a matter of preference. Most people plant in rows, running the rows across the entire garden and usually in a north-to-south pattern because this is supposed to let more sunshine reach the plants. Corn, a partial exception to this system, is generally planted in blocks of several rows side by side, and the vine plants -squash, cucumbers, pumpkins, and melons—are planted in spots, called hills, spaced to give them more elbow room.

If you plant in beds, you use paths to divide the garden into sections, and then treat each section as a separate little garden. We use both systems; planting in beds makes a more flexible garden and is especially good when dealing with smaller plants, but planting in rows makes an easier garden to manage.

• *Gaining extra room:* Whichever arrangement you use in your garden, keep in mind that you can gain extra room in a small garden by growing some plants as borders, around beds, or along the boundaries of the garden. Herbs do nicely as border plants; so do beets, some smaller midget tomatoes such as Tiny Tim, and the midget lettuces and cabbages.

Another way to gain extra room is to plant climbing vegetables such as midget cucumbers along your garden fence or where they can go up a trellis or pole, giving you a garden in the air.

A third room-gainer is called succession planting. It consists of keeping the earth occupied all season, continuously. As soon as you harvest one crop, plant another in the same place. And you don't have to wait until the entire planting is harvested before you put some other vegetable there. As you harvest a single plant, a lettuce for instance, immediately put another plant in the same place, a beet, another lettuce, kale, turnip, etc., after digging a handful of compost and a little fertilizer into the spot. Many gardeners make a practice of putting a root vegetable where a leaf vegetable such as lettuce has been, but this is not a have-to. The important thing is to keep your midget garden working for dear life the whole season through. And by keeping some small plants growing along in a flat or one corner of the garden, ready for transplanting when

needed, you can usually fill any gap as soon as it appears.

• *Spacing:* How far apart do you plant vegetables? You plant midgets closer than standards, and you'll find details on this with each vegetable we take up in Chapter 4. The general rule, though, is that rows should be far enough apart to permit cultivating (this would be 12 inches to 18 inches apart for most midget vegetables not planted in hills), and plants in the same row should be far enough apart to just touch each other.

• *Planting:* You plant seeds in the garden exactly the way you plant them in containers indoors, as already described. But in the garden you usually add fertilizer at the same time you plant seed or set out transplants, to have it there and waiting for the plants as soon as they need it. We do this by sprinkling the fertilizer into the row and cultivating it in, so that as the roots grow downward they'll find the fertilizer. A general rule is 1 pound of fertilizer for each 20 feet of row. Compost is also a fertilizer and is commonly added along with other fertilizers, as we will explain in the next chapter.

• *Timing plantings:* Certain vegetables are ordinarily planted only once a season, either because they take all season to mature, like winter squash and pumpkins, or because they keep on producing for a good while once they start, like cucumbers, melons, eggplants, peppers, and tomatoes. Most of the other vegetables can be planted twice or more often, depending on how long your season lasts, and how fond you are of the vegetable. This is succession planting, the same thing we spoke of a few paragraphs back when we were talking about keeping the earth occupied continuously. We may make half a dozen plantings each of turnips, carrots, and lettuce in this way, and we can usually get in three plantings of corn, but the summer warmth comes too soon to get in more than one planting of peas.

Interplanting, with good timing, is another good way to make intensive use of the space you have available. You interplant by putting in the same row or bed two or more vegetables that mature at different times. Radishes, for example, are fast growers and are removed as soon as

mature; so we may drop a few radish seeds in the row where we are seeding beans. The radishes will be big enough to harvest before the beans need the room. Leaf lettuce is another fast grower, and we often plant it (or transplant it from a flat or nursery bed) between more leisurely vegetables such as peppers. Sometimes we almost think the competition makes the slowpokes less slow; anyway they *seem* to grow faster when they have a pace setter.

• *Weeding:* Weeds seem to seek out gardens to grow in, and weeds are frowned on by gardeners because they compete with the vegetables for food, water, air, and sunlight. One of the reasons mulches are popular with gardeners is that they discourage weeds, and we'll take up mulches in the next chapter. For the moment it will be enough to say that a mulch is a blanket of straw or something else spread on the soil. With enough mulch, you'll have few weeds. Your garden won't be entirely weedless, because a few manage to grow even through a deep mulch, but the effort takes a lot out of them, and they are easily pulled up.

When working on the bare ground or on ground only lightly mulched, a sharp hoe is the weapon for killing weeds. Keep it sharp and cut weeds off at ground level, keeping the hoe blade almost flat to the ground. And if they are carrying ripe seeds, you can use the hoed weeds as a mulch, one of the few jokes we gardeners can play on a weed.

Chapter 2

Feeding and Watering Midget Vegetables

In the first place, what *is* compost? Compost is organic matter which has become so well broken down by bacteria and fungi, called micro-organisms, that it can help feed plants in the same way that well-rotted manure used to and still does when gardeners can get it. Even though we happen to have manure, from cattle and chickens, we also make all the compost we can, it is so valuable in the garden. And incidentally, well-finished compost looks like well-finished manure; both are dark brown to blackish, and have the same general texture and the same agreeable odor—something between a clean barn smell and a woody-earthy one.

Besides nourishing plants, compost is one of the finest ways to build better soil. It does this by adding organic matter, and there isn't a garden on earth that doesn't need organic matter. In fact we never heard of a gardener who had enough compost to suit him, and we probably never will.

Another comforting thing about compost is that it takes charge. When you put it on your garden you are giving the garden a beautifully balanced diet—because compost has in it all the various elements a plant hopes to get from the earth. This includes the minor elements, the nutrients plants need in minute amounts.

Another point—compost isn't here today and gone tomorrow. The compost you give to your garden this spring will be working along all season. This same compost will go on improving your garden soil next year too, absorbing and holding water until plants need it, making soil nice to work with, feeding the valuable micro-organisms and earthworms.

What do you make compost from?

Vegetable wastes from your kitchen and garden are the main ingredients of a midget-garden compost heap. (We say "heap" for convenience; not all compost is made in a heap, as

we'll see.) Broadly speaking, you can include any once-living matter in compost, but in small home-garden terms it is best to omit meat scraps, fats, and eggshells, which attract animals, and to stay with such material as grass clippings, hedge trimmings if they aren't very woody, leaves, garden plants that have finished bearing their crops, faded flowers, potato peelings, orange and lemon rinds, coffee grounds, tea leaves . . . well, you get the idea. And just to keep on the right side of the law, you might check with your local health or sanitary department on any regulations as to compost heaps before you begin. In congested areas there may be regulations, since compost has to be made properly there or not at all.

How to make compost:

Making compost isn't complicated. The micro-organisms do the real work, and you don't even have to go looking for them they are already on the vegetative wastes you make the compost with.

First we'll mention the easiest way to make compost, the *layer method.* We used to use it, but it is too slow for us. You simply pile up a heap of the organic waste materials already suggested. You start with a 6-inch layer of them, then a 2-inch layer of garden earth, and then repeat these layers until your heap is anywhere from 3 feet to 5 feet high. It can be 3 feet square, or more. End up with an earth layer on the top, sloping it to the center to form a basin that will catch rain. As you make the layers, wet them down if they aren't already as moist as a fresh head of lettuce, or a damp sponge. And that's it. You let the heap alone and it gradually decomposes into compost. You can hasten it some by chopping the organic matter first into pieces 1 inch or 2 inches long, and also by adding some nitrogen, as by sprinkling blood meal fertilizer on each of the green layers at the rate of one or two tablespoons per square foot. You can also re-pile the heap after two months or so, to hurry it.

Made in this way, a compost heap may be ready to use in two or three months if you make it in the summer and remember to wet it down during dry spells. In cold weather it takes much longer, though eight months or more. If you have the space, and plenty of raw materials for compost, you may want to use this system and have several compost heaps going along in different stages of decomposition. Once compost has finished breaking down, it can be left in the heap until you need it. In this case, protect the heap against prolonged heavy rain by covering it with something like sheet plastic held down with bricks or boards.

The way we now make compost gets the job done much faster—in two or three weeks in summer. The chief difference between this method, which we call the *turning method,* and the layer method, is the greater activity of the micro-organisms, due to frequent turnings of the material as it composts.

It is handier to use a bin for this system. It isn't a

necessity, but a bin is a convenience, looks neater in the garden, and in cool weather a bin helps hold heat in the heap, so that decomposition doesn't slow down greatly. The bin is merely a frame, a box without top or bottom, 3 feet or 4 feet square, and up to 3 feet high.

Into this bin goes the chopped garden and kitchen waste, including any paper that happens to come along, such as paper towels, pieces of waxed paper, and newspaper. We add water if the mass doesn't feel moist, like a damp sponge. When the heap is at least 12 inches high—or up to perhaps 4 feet high if we have a lot of raw material for it—we begin the turning, using a spading fork, and do not add any more fresh raw material from this point on. A simple way to do the turning is to set up another bin alongside the first one and fork the material into it. If you aren't using a bin, just re-pile the heap, putting the outside part on the inside this time. Then repeat this turning every two or three days.

As decomposition proceeds, the heap heats up and will feel warm to the touch. Decidedly warm, in fact, if it is working well up to 160° F. or a little higher with this method, and will be giving off steam even as soon as the first turning. This heat dries the compost, so we add water as needed, usually every second or third day, until the compost again feels damp-sponge moist. Those not familiar with making compost this way, even old hands at gardening, are always astonished at the heat generated. It is due to bacterial action, and to do this, the bacteria must have air. This is the reason for the frequent turning—it lets air into the heap. Sometimes it lets in too much air, so if the compost is slow to heat and feels springy when we step on the heap, we tramp it down.

At this point you may be thinking: "This is all very well, but what if I haven't got nearly enough garden and kitchen wastes to fill a bin?" All right, you can still make compost in this way. We call this mini-composting, and we have made it with only a bushel or two of raw materials. We simply chop them up with the spade, and pile them about 12 inches high in a squarish heap in one corner of the bin. We keep this heap moist, exactly as we do the larger heap, and we turn it less often every three or four days. It takes only a few days longer to finish than the larger heap takes. Mini-composting

would take care of a very small midget garden's compost needs. A few of these little heaps can be spotted about in a spread-out garden, too, in order to have compost conveniently near where it is wanted.

Mini-composting can also be done in a container, such as a trash can. Punch several half-inch holes in the sides and bottom of the can for better ventilation, and set the can on bricks so that it is 6 inches or 8 inches off the ground, to let air circulate under it. Chop or cut with shears the raw materials for your compost, and put them into the can. Like the compost made in a bin, the mass should be as moist as a damp sponge. If not, add water. If it is *too* wet (and it tends to be when composted this way) add shredded newspapers.

Leaving the lid off the can helps aerate the compost, but put the lid on if it rains. The easiest way to turn this compost is to have two cans and transfer the compost to the one that's empty. Do this every two or three days. If you fill a 30-gallon can half full of the compacted raw material, you'll end up with about 100 pounds of compost when it is finished, so start with less if you don't want to deal with this heavy a load.

You can make compost in such a can without punching holes in the can, but in this case use a loose fitting lid, or none except when it rains, and turn the compost every day.

As we said, turning this compost is easiest when you are working with two containers, but you can manage it without this convenience. We have done it with a trowel, tipping the container slightly for easier handling, and then reaching in and stirring the compost very much the way a cook folds batter, scooping the trowel under the compost, and lifting it up and to one side, over and over. A pair of heavy rubber gloves is a good accessory for this work.

You can also make compost in still smaller containers, such as ordinary buckets, which hold 2 or 3 gallons, but the smaller the amount is, the slower it may work. It takes a fair-sized heap in a container to build a population of micro-organisms speedily. For someone gardening in planters on a porch, a more manageable way to use kitchen wastes would be this one:

Use only the succulent wastes, cutting them with a shears into shreds and small bits, or run them through a grinder or blender. You can add tea leaves and coffee grounds in moderation to this mixture after grinding or blending it. Work the mixture into the bottom third of the soil in a planter, using about half as much of the mixture as there is soil in the bottom third. Then sprinkle blood meal over the mass at the rate of 2 tablespoons per square foot, and fill the planter to the proper level with the rest of the soil. You can put in seeds or transplants at once. The compost will decompose as the plants grow.

Possible compost problems:

If you are using the turning method of making compost and the compost fails to heat, this is most likely due to one or more of three factors: (1) Moisture—too much or too little. The right amount is one-half by weight, and in home-garden terms this means as wet as a damp sponge. Pick up a handful of the compost and if it feels drier than a damp sponge, wet it down. But if it feels too moist, turn it, and as you do so, add some torn-up newspapers. (2) Air—too much or too little. If the heap is too wet it is almost sure to lack enough air, as wet compost compacts. If it feels compacted, turn the heap with your spading fork. But if it feels springy when you step on it, as if full of twiggy prunings, it needs to be *more* compacted. In this case, slice down through the heap with a sharp spade, starting at one edge and working your way into the heap, turning the material as you slice through it. This will cut it into smaller pieces, which will settle more compactly. It will help if you add some succulent plant waste as you do this (lettuce leaves, discarded bouquets, citrus and melon rinds, etc.). (3) Too little nitrogen will also slow the heating of compost. The best sources of nitrogen are succulent plant wastes such as those we just spoke of, along with such others as tomatoes, cabbage, chard, pea vines, and grass clippings. If you can't put your hands on enough of these, add the nitrogen by sprinkling a high-nitrogen fertilizer such as blood meal on the compost as you turn the heap, and wet it down a little afterward, if it isn't wet enough already. Use about ¼ cup of the blood meal to each 2 bushels of the compost.

Too *much* heating is not a problem with compost, by the way, as long as you keep it properly moist so that the heat doesn't get a chance to dry it, which will slow down decomposition. "What if it catches fire!" a friend exclaimed on seeing our compost steam. It doesn't catch fire, but its heat does literally cook some of the soft vegetables in it.

Besides a possible problem of non-heating or slow heating, an occasional compost heap develops a bad smell. This is most often due to a lack of enough air or too much moisture, or both. Again, the remedy is to turn the heap, which gets air into it and also dries it somewhat. Any objectionable odor

should be gone by the second or third turning. For faster results, mix some earth with the heap as you turn it. Lime or fireplace ashes will also do this, but they reduce the amount of nitrogen in the compost. Too large a proportion of juicy materials in a compost heap may cause an ammonia smell. If so, mix some dry matter such as straw, sawdust, shredded newspapers, or dried leaves into the heap as you turn it.

How do you tell when compost is ready to use?

When the compost heap cools and its color has darkened to black or brown, compost is ready to use. It may still be fairly warm, over 100° F. Some gardeners "cure" their compost at this stage, whereby it is left a few days longer in the heap or spread in a lower pile. We think this is a good idea but we don't do it if we need the compost sooner, and we nearly always need it sooner.

Ideally, compost should be so broken down by decomposition, you cannot recognize any of its components. This is true for softer components such as melon rinds and cabbage leaves. More woody materials can still be recognized, though, and if they are quite tough, like old broccoli plant stalks, we run them through another compost heap or two, until they give up.

How do you use compost?

Compost is a splendid fertilizer, acting gently and steadily on plants when worked into the soil before seeding or transplanting, or spread on top of the soil alongside plants later. We have seen laboratory analyses showing that when compost is made of plants grown on good soil, the three most needed plant nutrients, nitrogen, phosphorus, and potash, can total some 10 percent, which is a good fertilizer percentage in anybody's language. In addition, compost includes the elements plants need only a little of, but need that little desperately. And, like good barn manure, compost feeds the soil in ways we know nothing of—except by seeing how well plants do when compost is added to the soil they grow in.

As a part of a potting mixture for transplants, or a seeding mixture to start seeds in, compost provides nourishment, plus

a protection against damping-off of seedlings.

When steeped in water, as we will explain further along, compost yields a solution that feeds plants quickly. We use it to hurry along any that are growing too slowly.

We use compost in another way we thought of, though we imagine other gardeners have worked it out too. What we do is to sometimes get an earlier spring start by taking advantage of the heat that finished, but still fresh, compost gives off. First we dig a hole big enough to take about a bushel of this warm compost. We put the compost into it, put a few inches of soil on top of the compost, bringing the level up to ground level, then plant seeds of a tender vegetable (one that frost would kill) such as cucumbers there. We cover this planting with a Hotkap, or for a larger planting a piece of plastic sheeting supported by four sticks pushed into the ground. We anchor this little tent around the bottom with earth. The compost warms the soil, the seeds sprout quickly, and we are three weeks ahead of everybody, with no attention needed to tend seedlings or to transplant the young plants. And the cucumbers get nourishment from their compost all summer.

Compost also improves soil physically. With compost liberally spaded into it, our difficult clay becomes tame, easier to dig, a pleasure to cultivate. And instead of running off, water soaks in. And stays, for digging compost into the soil is like digging in sponges, the way it holds water where plants can take advantage of it. It does the same service for gardeners who are cursed with sand to garden in.

Another use of compost, and a good one, is as a mulch. We'll go into mulching shortly, so we won't dwell on it here. Just remember compost when you think of mulching.

If you were to make your midget vegetable garden on soil that had never grown anything but the native grasses and so forth virgin soil, as it is called—you could forget about using fertilizer on your garden. Your plants would get the nourishment they needed from the soil for the first season or two, along with what they always get from air and water. And even on soil that has grown cultivated plants and therefore isn't virgin soil, you *could* grow a garden without adding fertilizer. We've done it to see what would happen, and it grew vegetables. So . . .

Why add fertilizer?

The answer: To grow better-tasting, better-looking, better-for-you vegetables, and to grow more of them in the same space, and faster. All this happens when you fertilize the garden, because you are replacing with the fertilizer some of the nutrients that harvested crops have taken out of the soil, leaving it in short supply.

As far as scientists have been able to tell, up to this time, plants need sixteen kinds of food. The three foods (or nutrients, as plant foods are called) that they get from air and water are carbon, hydrogen, and oxygen—and these three make up the great bulk of what the plants live on. The other thirteen nutrients that are necessary to plants come from the soil and from fertilizers that gardeners supply. The big three in this group of thirteen plant foods are nitrogen, phosphorus, and potash (also called potassium). Plants take so much of these three from the soil every season that when you hear the term "balanced fertilizer," it refers to a fertilizer that has these three nutrients, and usually nothing but these three. The other ten nutrients are vital to plants, but it's a fact that many and many a gardener hasn't the vaguest idea what they are, and is none the worse for it.

What each nutrient does:

The scientists themselves are a little fuzzy on what some of these nutrients do for plants. Here's a digest of what they say.

Nitrogen is needed to grow healthy green leaves, and is ordinarily the first thing a gardener thinks of giving his plants if they look yellowish. Plants make protoplasm with nitrogen, protoplasm being the basic building-block stuff of all life. *Phosphorus* enables plants to mature their crops; too little phosphorus, poor harvest. *Potash* helps plants to grow strong stems, and helps the edible-root plants (beets, carrots, and the like) make good roots. *Calcium* is what makes lime sweeten an over-acid soil, and calcium also helps roots and other plant parts to grow. *Magnesium* has a mysterious but vital role in helping leaves do their main job, manufacture starch and sugar. *Sulfur*, like nitrogen, helps make protoplasm. *Iron* goes into the green coloring of leaves, the chlorophyll. *Manganese* also has something to do with making chlorophyll. *Zinc* is needed by plants' enzyme systems, and forms a part in leaf-making. *Copper* also goes into the enzyme systems, and helps keep plants growing at correct heights. *Boron* keeps plants growing steadily. *Molybdenum* enters into the enzyme systems in some small but important way. *Chlorine*, the water purifier and household

bleach, is also necessary to plants but nobody knows why.

Now that we've run through the list, we'll add at once that most soils have enough of these nutrients, except the first three -nitrogen, phosphorus, and potash. We, for example, have never had to go looking for zinc, or boron, or manganese, or any of the other minor elements to feed our garden. Probably neither will you, especially if you make compost for your garden the way we have described. Good compost contains *all* the nutrients we have just listed.

What are the organic fertilizers?

Today you can buy organic fertilizers in many stores that stocked only chemical ones two or three years ago. The kinds of organic ones that you can get are few, but are increasing. The ones we'll mention here are those you are more likely to find on sale at garden suppliers, hardware stores, some supermarkets, feed stores, and some mills or processing plants dealing with a product of which the fertilizer is a by-product. Cottonseed meal, in this way, is a by-product of oil extraction from cottonseed. In addition to the commercial fertilizers, we also list here a few household items that can do double duty as garden helpers.

- *Blood meal*, a by-product of packing houses, is a balanced fertilizer but heaviest by far in nitrogen, about 15 percent. It contains about 1.5 percent phosphorus and 1 percent potash. We like it as a fertilizer when we sow seed and set out young plants, and we nearly always add some compost at the same time, for long-lasting effects. "Long-lasting" is, in fact, a characteristic of the organic fertilizers. They work slowly compared to chemical fertilizers, and if a plant isn't one of the heavy feeders, we may give it the early fertilizing just referred to, and never give it another.
- *Bone meal* is another packing-house by-product. It looks like very finely ground cornmeal. It has about 3 percent or less nitrogen but is very heavy on phosphorus, ranging upward from 15 percent. If it has potash, this will be less than 1 percent. Not all bone meal has potash, but if you mix bone meal and blood meal in equal amounts you will have a balanced fertilizer. It will be light on potash, but if you use compost along with it, as we do, this will

add some potash. Another point here is that bone meal works better when teamed with other organic matter, and for this role compost is perfect.

• *Castor bean meal* has 5 percent or more nitrogen, a good amount. It also has about 1 percent each of phosphorus and potash.

• *Cottonseed meal*, much more available to home gardeners than castor bean meal, is also a higher grade fertilizer, running 6 to 7 percent nitrogen, and around 2 percent each of phosphorus and potash. We consider it an unusually slow-acting fertilizer, but we like its steady performance, and it has, like compost, the ability to bring out the best in plants.

• *Compost* we have spoken of several times. It is often considered more of a soil conditioner than a fertilizer, but good compost made with a variety of plant wastes will have about 2 percent nitrogen, about 3 percent phosphorus, and about 5 percent potash. This is a lot of plant food per pound, and makes good compost much more than only a soil conditioner, good as that is too. What is also important—sometimes *most* important—is that the minor elements are also present in compost, along with traces of many minerals that plants must make some use of—since they were contributed to the compost by the plants that the compost was made of.

• *Coffee grounds* are usually an ingredient of compost in our garden, but they are also a mild but balanced fertilizer by themselves, running in the area of 2 percent nitrogen, and of phosphorus and potash, a total of about 1 percent.

• *Fish meal* made from discarded fish parts, has about 10 percent nitrogen content and 4 to 5 percent phosphorus.

• *Greensand* is a mineral, laid down as an ocean deposit, that is used for its potash content, about 6 percent.

• *Manure* is a good source of nutrients, poultry manure being highest over-all, with a total of 7 to 8 percent among the big three, nitrogen, phosphorus, and potash. What city gardeners are more apt to find easily available, however, is dried steer manure. This averages about 1 percent nitrogen,

0.5 percent phosphorus, and 1 percent potash, for a total of about 2.5 percent. Like compost, it is a soil structural aid, as are all manures. It can also be included among materials being composted, at a rate of a quart or two of the dried steer manure to a bushel of chopped vegetable wastes.

- *Rock phosphate* is quite rich in phosphorus, having about 30 percent. Aside from being pretty heavy to handle, rock phosphate offers a good way to put a major nutrient in your garden soil.
- *Wood ashes* from your fireplace are a good source of phosphorus, about 2 percent, and of potash, about 5 percent. Hardwood is the best source of ashes for garden purposes. Some other nutrients are present in ashes in small amounts, and since these include calcium, when you use wood ashes on your garden you should take the same precautions as when using lime—don't apply the ashes within two weeks or more of applying another fertilizer if the other one contains nitrogen.

What about soluble fertilizers?

These are the fertilizers you stir into water which you then pour on or around the plants. Some of them can be absorbed by the leaves, and are called foliar fertilizers.

Except for fish emulsions, soluble fertilizers have not been classed by every organic gardener as organic. We have experimented with several and haven't made up our minds on this point. Solubles usually get a quick response from plants, and young plants are especially apt to show this because they haven't yet developed root systems that can search out in the soil all the nutrients they can use.

We'll add this -for someone who wants to grow midget vegetables in the minimal space of, say, a twentieth-floor apartment, a soluble fertilizer offers a good deal in convenience and neatness.

Like many other gardeners, we use a homemade soluble fertilizer. We put a spadeful of compost into a bucket of water, stir it, and use it on plants after it has steeped for from half an hour to half a day. We could strain it, but mostly we don't bother, just dipping out the liquid with a can and

pouring it around the plants. We give them from ¼ cup to 1 pint per plant, depending on their size. We nearly always get a quick reaction from plants that look as if they could use a shot in the arm.

Since you can overdo any kind of fertilizing, we space these soluble compost feedings about a week apart if we give a plant more than one of them. We aren't sure if soluble compost is also a foliar fertilizer though we think it is. Some gardeners soak seeds in soluble compost before planting, feeling it helps germination. We haven't done this, as wet seeds are hard to handle, but another way to get something of the same effect is to pour soluble compost into the seed trench just before sowing the seed, and plant them while the trench is still quite moist.

How do you apply fertilizers?

Unlike chemical fertilizers, most organic fertilizers do not damage plant roots and other sensitive tissues if they touch them. We say this to put your mind at ease in case you have heard of fertilizers "burning" plants, in the way lye would burn your skin. Fresh manures, especially poultry manures, generally are not put in contact with plant parts though we have used fresh chicken manure in this way without any bad results that we could detect.

However, since the idea of using fertilizer is to provide nourishment where plant roots can get at it, fertilizer is commonly worked into the soil *below* the level where a transplanted plant's roots will be, or where seed is about to be planted. Then, as the plant grows or the seeds sprout, the roots work their way down to where the fertilizer was put. The fertilizer can be 1 inch or so below the seed level, and as much as 4 inches below a transplant's roots; the matter of distance is not critical. We go about it this way:

If we are planting seeds, we open a small trench, say 4 inches deep, in the garden and work compost into it with a hand cultivator, mixing the compost with the soil. We'll end up with two or three inches of this compost-soil mixture in the trench bottom, and we then sprinkle fertilizer on it, and work that in. How much fertilizer? It depends on the vegetable being planted, but 1/3 cup of blood meal or 2/3

cup of cottonseed meal for a five-foot row is what many vegetables do well with. Specific recommendations for each vegetable are given in Chapter 4.

After working in the fertilizer, we pull soil into the trench, firm it lightly, then with the edge of a board we press the soil down to the right depth for the seed we are planting and plant it.

For a transplant, we dig a hole that is from 1 inch to about 6 inches deeper than what the plant will need. We then work fertilizer into the bottom of this hole, from 1 or 2 teaspoons for a little plant 3 or 4 inches high, up to 1/3 cup or so for much bigger plants. Then we partly fill the hole with compost mixed with earth, place the plant in the hole and see that it will be at the right level when we fill the hole—the right level is usually one a little deeper than the level in which the plant had been standing before transplanting. We then fill the hole around the plant with more of the compost-earth mixture. We have sometimes used all compost and no earth to fill the hole if the compost wasn't too coarse and we had plenty of it. This is a good way to grow lettuce very fast.

Additional fertilizer is often given to some plants after they are half-grown. This is called side-dressing because the fertilizer is worked into the top half inch of soil alongside the plants, a few inches away from the stems. Vegetables that mature their crops quickly and are then through, such as radishes and cress, don't need more fertilizer than they get when planted; others often benefit from side-dressing—though organic fertilizers last so long in the soil that, in most cases, we give side-dressing only to heavy producers that are in the garden for a good while. We like to use compost for side-dressing; it can be spread alongside the plants and doesn't need to be worked into the soil. Soluble compost can also be employed. Among the fertilizers we've mentioned, others favored for side-dressing are cottonseed meal, fish meal, manure, and wood ashes.

Which plants need most feeding?

The vegetables that want a generous helping of compost and fertilizer to start with and side-dressing later (except for the fastest croppers) are these: Most onions and their

relatives such as leeks; most leafy greens, i[illegible] salad plants; cucumbers, melons and squash; cabb[illegible]e and its relatives such as broccoli; eggplants, peppers, tomatoes, corn, and celery.

The vegetables that can get along with the least feeding are most root crops. Well-finished compost and a light dressing of fertilizer worked into the row at the time of seeding will supply their needs, and this is especially true of the midget root vegetables. This type of feeding will also satisfy most herbs you are apt to plant.

In between the heavy feeders and the light feeders are beans and peas. Give them an average amount of compost and fertilizer when seeding them, but side-dressing is not needed if they grow normally. If they look puny to us we give them soluble compost once or twice while they are growing.

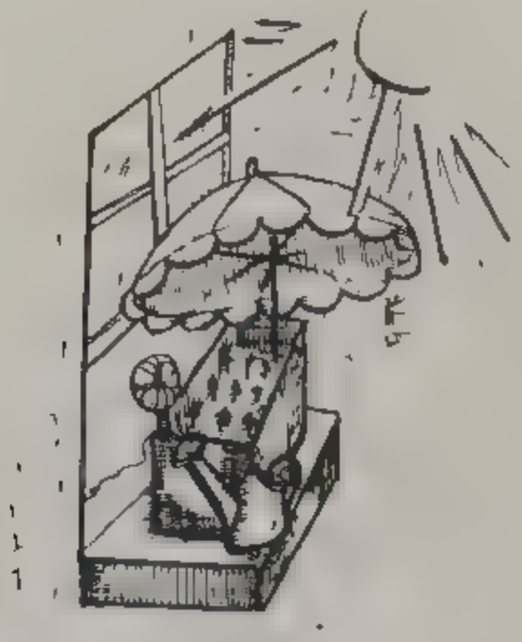
WATERING

We have said that a garden needs about 1 inch of rain a week, or water from your faucet to amount to this. Though plants in very sandy soils need more, and those in humus-rich soils can get along with less, 1 inch is a workable average. So a rain gauge can be a good garden accessory. A tin can makes a good enough rain gauge for this purpose. By setting a few cans in your garden when you water with a sprinkler, you can also tell how long it takes the sprinkler to rain down 1 inch. After that, you can merely time it—half as long will give the garden ½ inch, and so on. Since few sprinklers put the same amount of water on every square foot that they cover, several tin cans, here and there about the garden, will also show where the most water is falling, and where the least goes. The vegetables that want the most water are the fast growers, and the ones producing large crops of succulent fruits.

You might think that midget vegetables should get along with less than the inch-a-week average. Individually they do. But they are planted closer together than standard vegetables, and a garden of them is an intensive unit that takes about the same water that the same space would if planted to standards.

(We take up the watering of container plantings separately, in Chapter 5.)

Midsummer is the time when a garden needs most water, as this is the period when most of the vegetables are working hard producing crops, and are using more water. Midsummer is also the period when vegetables lose more water because of the stronger sunlight. If you see your plants looking wilted in the morning, it very often means they need water. Wilting in the afternoon on a warm day is not so infallible a sign of distress, but check the soil for moisture by digging it here and there with your trowel. It should feel moist and look moist not much further down than 1 inch below ground level.



MULCHING

By covering your garden soil with what is called a mulch, and which consists of straw or leaves or any number of other things, you can reduce the need for watering. This is because the mulch reduces evaporation from the soil. It also makes plants happy in several ways, especially in the root zone, where it is said to keep roots cool. It also lets some roots make use of the soil layer close to the surface, which might dry out too much between waterings for them to live in if it were bare.

Must you mulch?

In case you wonder if you must mulch, in the sense that you must water and must fertilize, the answer is no. A mulch is nearly always a good idea, but it isn't a have-to, and some gardeners never mulch, or maintain what is called a dust mulch by keeping the surface of the soil cultivated. In addition to these exceptions to mulching, there are some others, and they are especially applicable to very deep mulches.

One of these exceptions concerns gardeners who are in cool or short-summer climates. There, mulches are quite apt to keep the earth from warming up soon enough in the spring to grow some crops; even fast midget vegetables can't make a crop in less time than they need. In this situation you should not mulch your garden, or should wait until the soil has warmed up and the longer-season plants have had a chance to start growing.

Another exception to mulching is the climate with brief and scanty rainfall. There, a mulch may soak up most or all of what rain does fall, depriving the plants of it. Under these conditions, if you are dependent on rainfall to water your garden, mulching is not a good idea.

As we said, however, these exceptions are just that—exceptions. Mulching is good practice for the great majority of gardeners.

When do you mulch?

If you are just starting your garden, wait until late spring or early summer to mulch it. By then your midget vegetables will be growing along, establishing themselves, and you can tell better how deep a mulch will be suitable. Before laying the mulch down, loosen the soil about 1 inch deep with your cultivator, and water the garden. Do this from several hours to a day before mulching.

From this point on, you keep a mulch on the garden just about all the time, adding fresh material to it occasionally, since a mulch is slowly but continually decomposing and joining the garden soil. To supply the nitrogen that decomposition requires, you sometimes add some nitrogen when you mulch. We'll tell you how much, under each of the

mulches we list below. When you add mulch you just put it on top of the existing mulch. What we have just said about mulch continually decomposing applies to certain *organic* mulches, such as straw and leaves; we favor these, and so do most organic gardeners, but plastics and some other non-organic materials are also used for mulching, and these do not decompose. We'll talk about them in a minute.

How deep should a mulch be?

Except for plastics and other such sheet mulches, the depth of mulches varies from 1 inch to as deep as the plants being mulched can take without being buried alive. For many midget vegetables a 2- to 3-inch mulch is plenty. The more compact a mulching material is, the less deep it need be to do its job. For example, 2 inches of sawdust is an effective mulch, but 2 inches of twiggy prunings is not enough to bother with.

For any mulch, place it over the entire planting area except the paths, and snuggle it up against the plants.

Deeper mulches, especially, may become problems if moles should invade your garden. The mulch may keep you from detecting their presence until they have done much damage. Moles don't eat plants, but their tunneling kills plants by letting the plant roots dry out. Gophers are another problem in many areas. They do eat plants, and as with moles, you would have to remove the mulch until you had dealt with the problem. Setting traps in the tunnels is the surest remedy.

What are some of the mulching materials?

Rather than going on the market for one particular kind of mulch, you would do better to see what is available. It happens we can get ground-up corncobs, for example, but we can't get ground-up lava. Both make good mulches.

In deciding which mulches to list here, we also avoided including those we felt may be out of place in a garden of midget vegetables. One of these is weeds. Those that have not started to seed can make an excellent mulch when hoed down and piled around plants, but this often looks unsightly in a tiny garden. The same can be said for newspapers, a mulch that has become popular with some gardeners in the last few years.

• *Compost.* Both alphabetically and on merit, compost has first place here. To look its best as a mulch, compost should be shaken through a 1-inch mesh screen, then spread on the soil up to about 2 inches deep. No nitrogen need be added. We use compost more often than we use any other material for mulching. Gardeners sometimes make compost the underneath layer of a two-layer mulch such as compost topped with peat moss, the peat moss for good appearance, and the compost for its nutrient value and to maintain a good ground-level growing environment.

• *Grass clippings.* If you mingle grass clippings with a coarser kind of compost such as prunings or shavings, they do a pretty good mulching job. Used alone, they pack into a dense cover and soon begin to heat up if there is enough air and moisture for bacteria to work. That is, they quickly start composting. So mix them with some other mulch, or add them to your compost heap, where they'll contribute a good 2 percent or more of nitrogen. But, when used as a mulch they require the *addition* of nitrogen, ½ to 1 cup of blood meal per bushel.

• *Tree leaves.* There are two ways to use tree leaves for mulching. If the leaves have been piled and kept moist so that they break down and become leafmold—the kind of cushiony-crumbly stuff you find on a forest floor—this makes a good mulch, and needs no added nitrogen. The other way to mulch with leaves is described below under *Rocks.* Leaves are somewhat acid, so are ideal for plants that want acid soil, and can also be used on other plants. (A third way to handle leaves for mulching is to run them through a shredder first, so that they settle down better and don't blow away—but we don't think many midget-vegetable gardeners will have a shredder. You add ½ cup of blood meal per bushel of shredded leaves used for mulching.)

• *Peat moss.* There is a peat moss called lowmoor peat, and another called sphagnum peat. Both are used for mulching. The lowmoor looks something like dark, moist sawdust, and sphagnum peat looks like dried moss or seaweed. Both these peats can absorb and hold a good deal

of water, and on this account are not always satisfactory mulches in dry areas, or during dry spells in other areas, since they may prevent water from reaching the soil if the rainfall is scanty. Sphagnum peat also resists water when quite dry, shedding it like a duck. Both peats make attractive mulches, though, and are long-lasting. Neither needs any nitrogen added.

• *Plastic.* A see-through sheet plastic, and a black sheet plastic are sold for mulching purposes. Both are made of polyethylene. You spread them on the soil as if laying a rug, and hold the edges down with rocks or earth so the wind won't lift the sheet. Both let the sun warm the soil, and they also hold this heat to some extent, making a difference of up to 10° F. over the temperature of bare soil; the transparent plastic lets more heat through than the black plastic does. This quality makes plastic just the opposite of other mulches in this respect, and gardeners in hot-summer climates may feel as we do—that plastic is not for them. It may offer something for gardeners in other climates, however, and it is one answer for someone who needs an instant mulch.

You need not add nitrogen when you use plastic, as it does not decompose, and in fact is ordinarily good for more than one season.

• *Prunings.* Hedge clippings and shrub prunings make good mulching materials, and so do some tree prunings if they are fairly small or can be easily chopped up. Pile prunings 6 inches deep. No nitrogen need be added to prunings that are mainly twigs, but for leafy prunings add ¼ to ½ cup of blood meal per bushel.

• *Rocks.* If you live where rocks are easy to get, you can mulch with them. Roundish or flat rocks weighing a few pounds each are favored, placed on a layer of leaves or straw a few inches deep. Leaves and straw decompose in time, so more must be added at intervals. You determine this by pulling the rocks aside once in a while, to see the condition of the organic layer underneath. A little nitrogen should be given when the leaves or straw are spread in the beginning and also when more are added; 1 teaspoon of

blood meal to each square foot of surface covered should take care of it.

Small rocks, by the way, are no good for this kind of mulching. They are a problem to move aside when you add extra leaves or straw, and they get lost in this organic layer in time.

• *Sawdust and shavings.* Both these mulching materials are to be had at many lumberyards, and from builders and builders' suppliers. Shavings are simply tucked around the plants, and should be piled about 6 inches deep if possible, as they settle. They may be blown away by wind when they are dry and fresh.

Sawdust makes a better mulch if it has been out in the weather long enough to rot. A layer 2 inches deep is good. If used fresh, sawdust is likely to cake and shed water like a roof, or to blow away in hard winds if uncaked. However, you can mix fresh sawdust with shavings to prevent caking, and wetting it down will keep it from blowing away.

Both these materials decompose slowly enough to need no nitrogen added, but if you want to hurry the decomposition, add ½ cup of blood meal per bushel. If your soil is very sandy, or very clayey, the decomposed sawdust or shavings will help considerably to improve its structure.

Chapter 3

Protecting Your Midget Vegetable Garden

As with taxes, so with garden pests—you're sure to have some. *Some*, not necessarily a lot. However, since you are growing a garden for you, not for the joy and comfort of bugs and so forth, this chapter is to help you know the pests and help you do something about them. We'll be taking up these points in this order:

1. Insects that are on your side—the helpful ones that destroy harmful ones. 2. Clues that tell what culprit to look for. 3. Midget vegetables and the pests that may pester them. 4. Organically safe controls to use. 5. The pests—what they look like, what they do, and how to stop them.

If you haven't had a vegetable garden before, and if there aren't any other vegetable gardens in your neighborhood, you may have hardly any pest problems your first season. Word gets around, though, and some pests eventually look you up. With this firmly in mind, form the habit of visiting your garden often. By often, we mean daily if possible. We visit ours several times a day, usually, though this is as much because a garden is always interesting as it is because we are checking for possible troubles. Even if you are new at gardening and may not at first know exactly what you are looking for when you go looking for troubles, you'll be surprised at how quickly you'll develop a sharp eye for anything that doesn't look . . . well, as good as it looked yesterday. If you can, do this visiting at various times of day, including after dark, with a flashlight. A night visit can be very informative if in the early mornings you keep finding new damage.

And when you visit your garden, pick off and kill at once any harmful pests that you can. In the list of pests, we mention the ones you can hand-pick. This is a good way to stop trouble before it gets a good start. You can dispose of hand-picked insects by dropping them into a can of saltwater. Or just step on them.

A good garden aid in examining insects is a magnifying

glass that enlarges 10 times. To examine a small insect, put it in a clear plastic bag and flatten the bag to hold the insect quiet.

Along with garden visiting, another excellent rule is: Keep your vegetables growing smartly along, and run a neat, clean garden. A healthy plant can survive attacks that may permanently cripple or kill a weak one. Good compost and enough watering will go far toward keeping plants growing well. And to help your healthy plants stay healthy, remove any sickly ones, keep weeds out of the garden, don't let trash accumulate, and when a plant has finished its useful life, remove it. Sickly plants are best disposed of, but young weeds and the mature vegetable plants that have finished bearing are good additions to your compost heap.

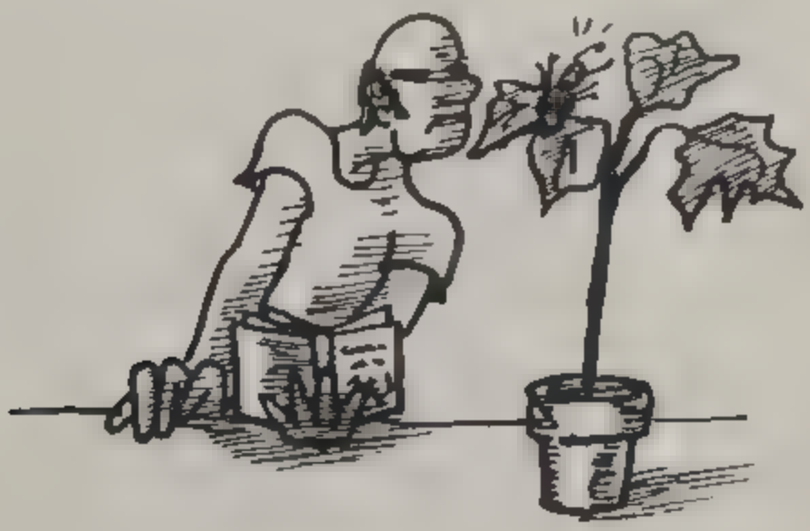
Another way to outsmart some pests is to plant an assortment of vegetables in the same bed, instead of planting just one kind of vegetable per bed. The assortment method is called companion planting, and the object is to make it hard for a pest to completely wipe out some favorite fare of his—which he might if it were all handily together in one place for him. Also, some gardeners feel that some plants help certain others when planted nearby; herbs are favorites for this use, and so are garlic and marigolds.

Most gardeners agree that birds are their friends, at any rate most of the time. True, the birds eat some young plants, and sometimes sample tender leaves you'd much rather they let alone, and because you can see this, you may think that's all they do. But they eat enormous numbers of pest bugs too, and some birds eat nothing else. The little birds are particularly apt to be all-meat eaters, the wrens, warblers, gnat catchers, and so on.

And if gardeners were ever to organize and name an official mascot, the toad would be a front-runner. A toad in your garden will flick out his tongue and dispose of all sorts of pests, including such wily ones as cutworms, slugs, and stink bugs. If a toad is in the immediate area it is likely to seek out your garden, and if so, you can help make it welcome by keeping a clay pan, the kind you put under a flower pot, filled with water and in a shady, quiet spot. Toads like to sit in water.

HELPFUL INSECTS

If you were trying word-associations on a home gardener and you said "insect," the chances are good he'd instantly say "pest," if not something much worse. The fact is, if every insect *were* a pest, gardening would be impossible. There are simply too many insects in the world to cope with if all were pests. As it is, many have no interest in gardens. Even better, many of those that do are there to catch the harmful insects. To know which ones are your friends, so you won't swat them, here are what a few of them look like and what they do for you. These are merely some you are more apt to see; all told, there are more than 10,000 kinds of helpful insects for gardeners to rejoice about.



Assassin bugs

About ¾ inch long, these are long-legged brown insects with wings folded together over the body. They show no alarm when approached, and may even bite if you touch them, but if you leave them alone they'll leave you alone. They move clumsily but are deft enough at catching other insects, grabbing them with their front legs.

Assassin flies

These are rather hairy black and gray flies with yellowish legs. They are nearly twice the size of assassin bugs, and prey on other insects as assassin bugs do.

Centipedes

These are the flat brown "thousand-leggers" you often see hurrying off when you pick up a rock they were under. They are easy to confuse with millipedes, a slightly harmful insect but more round than flat. The surest way to tell which is which is to examine their legs with your magnifying glass. Centipedes have only *one* pair of legs per segment; millipedes have two pairs.

Centipedes eat several other insects, including snails and slugs.

Damsel bugs

Looking like small gray assassin bugs, from ¼ inch to 3/8 inch long, damsel bugs also capture other insects with their front legs and kill them, usually aphids and other soft-bodied insects small enough for them to handle.

Doodlebugs

This brown, plump insect, up to ½ inch long and with jaws looking like forceps, is the larva of an insect that looks something like a dragonfly and is called an ant lion. It is the larva, the doodlebug, that kills the ants, however. It does so by digging a cone-shaped hole in sand or dry soil, then burying itself at the bottom. When an ant tumbles in, the doodlebug seizes it.

Dragonflies

Fast, strong fliers, these large (to 2 inches long) insects with two pairs of gauzy looking wings and with extremely efficient and huge eyes do their work in the air, catching other insects with their legs. They are inquisitive about human beings but are harmless to them.

Flower flies

Look for an insect something like a bee, about 3/8 inch long, with a black and yellow striped abdomen, hovering over a flower. The larvae of this fly look something like slugs, but eat harmful bugs instead of plants, mainly aphids and mealy bugs.

Ground beetles

Hiding under rocks, like centipedes, ground beetles are the black or dark brown insects with hard shells that go scurrying off when you discover them. Most have small heads, and some have colorful markings. They work at night and prey on harmful insects. We have known some of them to do a little damage, but they are considered generally to do more good than bad.

Hornets

Large, up to ¾ inch long, these fierce insects kill caterpillars (commonly called worms by gardeners) by cutting them up for future food. Hornets will sting human beings if disturbed, but are not pugnacious otherwise. Yellow jackets are a type of hornet and operate in the same way.

Lacewing flies

Look for a delicate, pale green insect with golden eyes and filmy oval wings nearly twice as long as its body. Total length from head to wing tips will be ½ inch or a bit more. This is a lacewing fly. Its eggs are supported on hair-like filaments placed by the lacewing on tops of leaves, and it is the larvae that hatch from these eggs which help the gardener. These larvae are called aphid lions; they are 1/3 inch long,

yellowish or mottled red and brown, and torpedo-shaped. Jaws look like forceps, and there are hairs on the body. The larvae devour harmful insects, including thrips, the hard-to-kill mites, mealy bugs, and aphids.

The larvae of a related insect, called the brown lacewing, attack scale insects and others, and are also destructive of aphids. They are called aphid wolves. Adult brown lacewings are about 3/8 inch long.

Ladybugs

These are the helpful insects that almost everybody knows. Ladybugs are a little less than ¼ inch long, usually are shiny red or tan on top, with two or more black dots. There are exceptions, but the ladybugs you'll see are apt to fit the description we give. They are beetles, and are also called lady beetles or ladybird beetles. Both they and their slightly larger larvae (wedge-shaped, brightly marked with blue, gray, or orange) feed on mites, scale insects, and aphids.

Praying mantids

Once you see a praying mantid, or mantis, you never forget it. They are huge by insect standards, greenish or brown, with heavy abdomens and strong front legs which they hold in a praying position, ready to seize other insects. Most mantids are 1½ inches to 2 inches long, but some are 5 inches or more. All have triangular heads which they can turn to look at you. They are harmless to man and can even become pets, of a sort, as well as being garden helpers.

Rove beetles

These active insects are ¼ inch long or a little less, and are found where there is plenty of decaying organic matter in the soil, such as compost. Look for a shiny black, slender beetle with a flexible abdomen which is turned up at the end as the beetle hurries around. The larvae are the helpful ones, being parasitical on maggots.

Spiders

Though some people refuse to regard spiders as friends, nearly every spider is a help to man, busily spending its life capturing insects. This is also true in the garden. If you aren't sure whether something is an insect or a spider, count its legs. Every spider has eight. The insects have six. Spiders are not insects. They are arachnids, along with scorpions and mites.

Trichogramma wasps

Wasps are generally helpful insects in the garden, but we are mentioning the trichogramma particularly because it operates in a way that makes it enormously helpful. It is such a tiny insect as to be miscroscopic, and it works by depositing its peewee egg inside the tiny egg of another insect. The trichogramma egg hatches, and the larva kills the

host insect. This method can control harmful insects before they do any harm, and controls them on a much larger scale than that of catching and devouring adult ones, insect by insect.

You can buy trichogramma wasps, and some other helpful insects stocked by insectaries in this business, and release them in your garden as controls. However, we aren't suggesting you do this. It is not practical for small home gardens, in our opinion, though highly promising otherwise. And you're sure to already have some helpful insects in your area anyway. A more likely sounding thing for your midget garden is a spray called Bug Bait. You may find it in a garden shop near you. Put into the garden, Bug Bait attracts helpful bugs, especially green lacewings, ladybugs, and flower flies. If you can't find it locally, the makers are World Garden Products, World Building, East Norwalk, Conn. 06855, and it is carried by Stokes Seeds, the home-garden size (1 ounce) costing $1.95.

THE DAMAGE TELLS WHO DID IT

When you pay your garden a visit and find something amiss, you can often stop the trouble right away because you are discovering it early in the game. Here is a quick guide to some of the more common signs of trouble, and one or more possible causes.

Leaf damage

Tiny round holes . . . . . flea beetles
Angular holes . . . . . .weevils, worms
Other holes . . . . . .various beetles, worms
Skeletonized . . . . . various beetles or grubs (beetle larvae)
Whitish splotches, brown tips . . . . . .thrips
Curled . . . . . .aphids, leaf hoppers, mites
Drooping . . . . . borers; or root damage by grubs, gophers, moles, maggots, nematodes

Mottled yellow and green, wrinkled . . . . . mosaics
Darkish blisters . . . . . rust
Powdery coating . . . . . mildew
Spotted . . . . . fungi
Yellowing and wilting . . . . . fungi

Stem and plant damage

Collapse . . . . . fungi, harlequin bugs; or root damage by grubs, maggots, nematodes, gophers, moles
Stunted plants, yellowish leaves . . . . . fungi, mosaics, nematodes
Wilting, stunting . . . . . fungi, borers, stink bugs; or root damage by grubs, maggots, nematodes, gophers, moles
Eaten away . . . . . earwigs, grasshoppers, worms, slugs, snails
Stem or leaves cut cleanly off . . . . . cutworms

Other damage

Seeds rot in soil . . . . . fungi
Tumor-like growths . . . . . fungi

MIDGET VEGETABLES AND THEIR POSSIBLE PESTS

(Note: In addition to the genetic or true midget vegetables, we are also including here the standard vegetables that can be kept small, and for which growing directions will be found in the next chapter.)

Beans. Aphids, corn earworms, cucumber beetles, Japanese beetles, leaf hoppers, maggots, Mexican bean beetles, mites, stink bugs, weevils, wireworms, anthracnose, bacterial blight, downy mildew (lima beans), mosaics, rust, seed decay.

Beets. Blister beetles, cutworms, flea beetles, maggots, damping-off, leaf spot.

Cabbage. Aphids, cabbage worms, cutworms, flea beetles, harlequin bugs, maggots, thrips, weevils, damping-off, wilt, wirestem, yellows.

Cantaloupe. Aphids, cucumber beetles, mites, nematodes, squash bugs, thrips, anthracnose, bacterial wilt, downy mildew, leaf spot, mosaics, powdery mildew.

Carrots. Leaf hoppers, weevils, wireworms, yellows.

Celery. Aphids, leaf hoppers, slugs and snails, wireworms, blights, damping-off, yellows.

Chard. (See Beets)

Chives. (No pests)

Chinese cabbage. (See Cabbage)

Corn. Corn borers, corn earworms, Japanese beetles, maggots, mites, bacterial wilt, seed decay, smut, wilt.

Cress. (No pests)

Cucumbers. Aphids, corn earworms, cucumber beetles, mites, nematodes, squash bugs, thrips, anthracnose, bacterial blight, bacterial wilt, damping-off, downy mildew, leaf spot, mosaics, powdery mildew.

Eggplant. Corn borers, corn earworms, flea beetles, leaf hoppers, mites, potato bugs, tomato horn worms, damping-off, wilt.

Endive. (No pests)

Garlic. (No pests)

Herbs. (Few pests)

Kale. (See Cabbage)

Lettuce. Aphids, cabbage worms, cutworms, leaf hoppers, slugs, snails, wireworms, mosaics, yellows.

Mustard. (See Turnips)

Okra. Aphids, corn earworms, Japanese beetles, nematodes, stink bugs, wilt.

Onions. Maggots, mites, thrips, wireworms, smut.

Peas. Aphids, cutworms, maggots, mites, weevils, blights, fusarium wilt, powdery mildew, seed decay.

Peppers. Aphids, corn borers, corn earworms, cutworms, flea beetles, tomato horn worms, weevils, anthracnose, blossom-end rot, damping-off, leaf spot, mosaics.

Pumpkins. (See Squash).

Radishes. Maggots.

Shallots. Maggots.

Spinach. Aphids, cutworms, slugs, snails, blights, seed decay, yellows.

Squash, summer. Corn earworms, cucumber beetles, squash bugs, squash vine borers, thrips, bacterial wilt, mosaics.

Squash, winter. (See Squash, summer)

Tomatoes. Aphids, blister beetles, corn borers, cutworms, flea beetles, leaf hoppers, mites, nematodes, potato bugs, stink bugs, tomato fruit worms, tomato horn worms, blights, blossom-end rot, damping-off, fusarium wilt, leaf spot, mosaics, verticillium wilt.

Turnips. Aphids, cabbage worms, flea beetles, harlequin bugs, maggots, thrips, weevils, wireworms.

Watermelons. Aphids, cucumber beetles, mites, nematodes, squash bugs, thrips, anthracnose, downy mildew, powdery mildew, wilt.

ORGANICALLY SAFE CONTROLS

Let's answer right away a question that new gardeners often ask: "What if I don't do *anything* about pests?" If we said his garden would be a failure in that case, we might be wrong. Every garden that has some harmful insects in it is almost sure to have some helpful ones too, and if the helpful ones include any that prey on the harmful visitors, the problem could be cleared up without the gardener's having to do a thing. This often happens, sometimes without the gardener knowing that anything took place.

But usually you do have to do something about pests, especially about plant diseases, which have no enemies to prey on them. In some cases there isn't any control, or only a partial one, so what you do is to accept the situation as gracefully as possible, and either stop trying to grow the crop under attack, or grow it with the knowledge it will be less than satisfactory. We know we'll lose some ears of corn to earworms, for instance, since we have an only partly satisfactory control for them, but we're perfectly willing to take the crop we can get. On the other hand, total wipe-outs by maggots stopped us from giving space to globe onions for the time being.

For larger insects and for slower ones, hand-picking is often the simplest and best control. Tomato horn worms, which look fierce but are harmless to man, are never present in large numbers and are easily picked off the leaves by hand. We also hand-pick cabbage worms and others, crush aphids when we find them, search out cutworms by stirring the soil around any plant that has been attacked, cut up slugs and millipides, and so on.

For pests in general, here are several weapons; some are familiar household items and some are commercial preparations.

Water. A jet of water from a hose will dislodge insects from a plant and is often the only treatment needed. Aphids are vulnerable to this treatment, as they are soft-bodied and easily killed. Mites and thrips are also killed by the water, and worms are knocked off the plant.

Don't use a stream so strong it will hurt the plant, of course, and don't use this method on brittle plants. A trombone sprayer will do as well as a hose, and better on some plants; use a spray setting of the nozzle instead of a jet when working with less sturdy plants. Another advantage of this sprayer is that you can throw the water easily on the undersides of leaves. Other sprayers will also serve, but we favor the trombone type for its simplicity and force, and easy repair when needed.

Soap. By adding soap to the water, you can make a spray that will drive off or kill many insects. This is, in fact, an old greenhouse standby; they use soaps made of fish or coconut oils, but any soap has some effect. We shave about a cupful of strong homemade soap into a gallon of warm water, stir or shake it until the soap has dissolved, and use it straight or diluted with twice or three times as much water. You can spray or paint it on plants. It works fast on insects it affects, and should be washed off within a few minutes because it will hurt the plant if left on.

Milk. Experimenters have found that spraying tomato plants with skim milk stops the attack of mosaic. This is a virus disease that stunts plants, greatly reducing crops. The leaves of a plant so attacked will be mottled and wrinkled. Various dilutions of skim milk with water have been used,

from equal parts of each, to one part skim milk and 10 parts water, sprayed on plants once every week or ten days. If mosaic should become a problem to you, the skim milk treatment is worth a try; no other organically safe controls are known at this time. Mosaics attack many other garden vegetables besides tomatoes; we list them further along in this chapter, under *Mosaics*.

Garlic, onions, hot peppers, tomato leaves. Each of these grow-it-yourself controls is blended with water to make a spray used against various pests such as ants, worms, and aphids, and against some diseases.

Its oil is the potent ingredient in the case of garlic. Extract it by pressing a garlic clove with the flat of a knife on a sheet of wax paper, or put it through a garlic press. The oily juice you get out of half a clove is mixed with a gallon of water for the spray.

Onions, hot peppers, and tomato leaves are made into sprays by mixing a ground-up cupful of any one of them with a cupful of water, stirring well, then draining off the liquid the next day. This makes a stock solution that is diluted with water when a spray is mixed. Proportions vary, but a good rule when working with things like this is to start light, say one part stock solution to 30 or 40 parts water. One tablespoon of stock solution in one pint of water would approximate this. The stock solution should be kept in the refrigerator.

We might add that, because not many home gardeners grow hot peppers, they can buy dried ones for this use as a spray, and in that case a blender may do a better job than a grinder. Add the water during the blending, and next day strain the mixture through cloth to obtain the stock solution.

Whichever of these four garden vegetables you use for spraying with, make the spray only half-strength if treating tender young plants. All four sprays are used as general insecticides, and garlic was found by California University researchers to also contain antibiotics with "strongly bacterial and fungicidal properties."

When you are using a spray, watch to see how the insects behave when it hits them, and whether the insect attack is still a problem a day or two later. This can tell you if you

may need a stronger spray dilution, or perhaps a different spray.

Soluble compost. We have already spoken of making a soluble fertilizer by steeping a spadeful of compost in a bucket of water for from half an hour up to several hours. This same solution is also an insecticide. We heard of this a few years ago and tried it. Just how the soluble compost works is not clear to us, but the results were encouraging enough to keep up the practice. And, though an insecticide is not ordinarily especially good for a plant, soluble compost decidedly is.

When using this solution as a spray, it must be strained twice through cloth. For hurry-up use, you can dip a whisk broom in a bucketful and spatter it on the plants, not bothering to strain it first.

Mineral oil. This is a weapon against corn earworms and nothing else, but if you raise one of the good little midget corns you'll be glad to know about it. With an eyedropper, put half a dozen drops of ordinary drugstore mineral oil on the cornsilk of each ear at the point where it is attached to the ear. The timing is important: Apply the oil when the silks are hanging limply and have just begun to turn brown. If the ear has not been invaded by an earworm, the oil will do no harm, and if an earworm is present, it will stop his damage at once by smothering him. Merely trim off the tip of the ear when you harvest it, to dispose of him.

Tea leaves. This is also claimed as a weapon against a specific pest, in this case, maggots. We are continuing to test it, and can't say how effective it is, but because maggots are difficult to control and have so few enemies (aside from gardeners), we are including it here, with the notation that it is on trial. The tea leaves are those left after making tea, and are used by mixing them into the soil when seeds are sown or plants set out. We have used the tea leaves damp, since they don't dry easily, at a rate of about 1/3 cup per foot of row.

Sulfur. Besides being one of the more needed plant nutrients, sulfur is also an old garden standby against fungi, and has an effect on some insects, though not many; young worms and certain mites and scales are those mainly affected by it. We consider sulfur a reserve weapon, to be tried if some

other treatments have no effect. Our conservative approach here is based partly on the cautions that must be observed. Sulfur is a poison to any of the vine plants—squash, cantaloupes, watermelons, cucumbers—and is hard on any plant in warm weather. These warnings apply to sulfur both as a dust and as a spray.

Rotenone and pyrethrum. We lump these insecticides because they so often come mixed together, and because they are both produced by plants. Both have been in use for a good many years, and have long been considered reasonably safe. That is, they are harmless to warm-blooded animals. Toads, lizards, and snakes, all of help in keeping down insects, are cold-blooded, and rotenone or pyrethrum could hurt them.

When mixed together, these insecticides deliver a well-timed two-way punch. Pyrethrum kills quickly, either by touching an insect or when the insect eats a leaf the pyrethrum is on; thus it is a so-called contact poison and also a stomach poison. Rotenone is also both kinds of poison to insects, and in addition it drives some insects away. Furthermore, though pyrethrum kills quickly and is then through, lasting for a day or less, rotenone keeps on working for about a week, a kind of slow-but-sure action.

Don't mix a rotenone-pyrethrum spray until immediately before you want to use it—a good rule for any spray except soluble compost, which needs to be steeped for a while.

Nicotine. This is another well known old insecticide, and of course it is another derived from a plant, tobacco. It is a contact and a stomach poison, with about a 2-day life. Black Leaf 40 is the brand name under which most nicotine insecticide is sold, and when making up a spray solution of it, you add some soap, which increases the nicotine's potency. Detergent doesn't seem to do this job, and to make it easy to add soap, either use soap flakes, about 1 cup to a gallon of warm water, or drop some soap in water and let it dissolve into a jelly a few days before you need it. Use about ½ cup of this to a gallon of warm water. Stir well in either case. This is a spray you can use when the weather is too warm for some others such as sulfur, and it is potent against a large number of harmful insects, especially if it strikes them—as it must to

kill a sucking insect, such as an aphid.

Nicotine is also effective against some insects when used as a dust. Sold as tobacco dust, a by-product of tobacco factories, it must be fresh to be worth using.

Whether nicotine is applied on the garden as a spray or a dust, the plant parts it strikes should not be eaten until two or three days after application, and then should be well washed, of course.

Thuricide. This is a trade name for a control of worms. The scientific name is *Bacillus thuringiensis.* Two other trade names are Biotrol and Dipel. Not all worms are affected, but those that are, are afflicted by an internal paralysis. This control is considered safe, but most home gardeners, we think, will find they can handle worm problems with other and older methods.

THE PESTS AND WHAT TO DO ABOUT THEM

Here are the possible causes of most trouble in home vegetable gardens, along with what you can do in each case. We are tempted to say the ones listed here are the more likely causes of trouble—since there are some less common ones we aren't listing. But to say "more likely" sounds as if you are pretty sure to have all of them. You aren't. There are many more pests in even this list than any one home gardener will ever meet. So don't let the number of them worry you.

When a suggested control for some pest is in *italic* type, it means you'll find details on it in the section just covered.

You'll find we often recommend destroying a diseased plant. This is a sanitary measure. Remember too that a diseased plant should be handled gently in order not to spread the disease, by scattering spores of fungus, for instance.

Anthracnose. This fungus disease reveals itself by turning leaves dark. With beans it also darkens the pods. Plants apt to contract anthracnose are beans, cucumbers, melons, and peppers. If you catch it early, spray with *garlic* solution. If not, destroy the plants affected, as by burning. Best cure is

prevention: Plant seed of varieties resistant to anthracnose (seed catalogs will specify this), and don't touch plants when they are wet from dew, rain, or watering; it spreads fungus diseases.

Ants

Besides tunneling the earth and sometimes causing roots to dry out, ants are disliked by gardeners because the ants, in their highly organized social structure, keep aphids as domestic animals, making use of a sweet secretion aphids exude. The ants protect aphids from insects that want to eat them, and also move aphids about from plant to plant.

Attack ants where they live—by pouring into their hills one or more of these preparations: *rotenone dust*, *pyrethrum* solution, or boiling water.

Aphids

You'll find aphids clustered on the undersides of leaves, and on plant stems, very inactive looking but busy sucking the lifeblood of the plant. Aphids are of various colors, from greenish to black, and all are pear-shaped and small, no more than 1/8 inch long. Some have wings. They breed constantly in summer, and so they multiply fast. Fortunately, they are not hard to kill, and have a lot of enemies. Their characteristic damage shows up as curled, distorted leaves.

First of all, control ants so they aren't on hand to shepherd the aphids. Second, whenever you see a small aphid colony, rub it out, literally, with your fingers. If we see a horde of them clustered on a leaf or stem that the plant can

spare, we remove it and step on it, mashing the aphids. When aphids are present in large numbers, spray them with plain *water, soap solution, nicotine, rotenone,* or *pyrethrum.*

Bacterial blight. This is a disease that beans, peas, and cucumbers sometimes get. Its symptoms are leaves blotched with yellow-edged brown patches, and there is no cure.

Prevention is the watchword here. Plant varieties resistant to bacterial blight, don't touch wet plants, and don't use overhead watering while blight is troubling your garden. Also remove and destroy any plants showing signs of the blight.

Bacterial wilt. This disease shows up in squash, cucumber, and cantaloupe plants as wilted vines, and in sweet corn as stunted plants.

The only practical control for the disease in corn is the use of resistant varieties. For the other vegetables, control takes the form of controlling striped cucumber beetles (listed below), because they spread the disease. In any case, diseased plants should be destroyed.

Blights. Several fungus diseases are called blights. The plants most affected are celery, peas, potatoes, and tomatoes, the trouble showing up first as spotted leaves, later through poor crops or the death of the plant. Wet and chilly weather encourages blights.

Spraying with *garlic solutions* may help, but if plants do not respond promptly, remove and destroy them. Some varieties are resistant to blight.

Blister beetles

Dull yellowish with black markings, these beetles measure ½ inch to ¾ inch long. They feed on leaves of tomatoes, potatoes, beets, chard, and occasionally other plants. Their name really means what it says, as they can blister your skin with a secretion called cantharadine. Though con-

sidered pests, blister beetles eat grasshopper eggs, so are somewhat helpful.

The most practical control is hand-picking of the few blister beetles you may find attacking your garden. Wear gloves, and crush the beetles.

Blossom-end rot. If your tomato and pepper fruits develop dark, watery-looking patches on the bottom, you can be sure it is blossom-end rot. Neither a disease nor an insect attack, it comes from one or both of two lacks—water or calcium.

See that the plants receive a regular supply of water, and either check to make sure your soil is not too acid (below a pH of 5.5, in soil-analysis terms), or, much simpler, work a cup of wood ashes into the earth around each of a few test plants, and watch to see if they stop having blossom-end rot. If so, do the same for the other plants.

Cabbage worms

An attractive white butterfly is the parent of a green worm that eats holes in leaves of cabbages and related plants, so whenever we can, we swat her. (Not often; she is agile.) The worm that hatches from eggs she lays is velvety green, smooth, and hard to see, looking like part of the leaf. Search both sides of any leaf that has been partly chewed away, and the worm will often still be there, still eating. There are usually small black droppings present also. Two other green worms attack cabbages, behaving the same way, and one of them, the cabbage looper, sometimes invades lettuce, mustard, and turnip greens. We have found it on some other plants, such as chard, but it is not considered a regular pest of these plants.

Hand-picking is often sufficient for control of these worms, especially if you make a point of visiting your garden often. Spraying or dusting with *rotenone* or *pyrethrum* is effective, and spraying with *Thuricide* may be in order if the infestation is heavy.

Corn borers

In addition to boring into ears of corn, these pinkish grubs about 1 inch long, larvae of a brown moth, eat pepper fruits and leaves, and occasionally other vegetables.

Hand-picking is the best control, but here it takes the form of crushing the masses of eggs, which are laid on the undersides of the leaves. Once the worm gets inside an ear of corn (usually by working his way through the plant), or into a pepper, he is home free. If applied before ears of corn form, a *rotenone spray* is somewhat effective, and succession plantings are recommended because some plants will then be coming along when the moths are no longer active at their egg-laying.

Corn earworms

This pest is hatched from eggs laid by a fluffy moth with shining eyes, which you have probably seen flying at night. The worms are about 1½ inches long, usually green or brown, and striped. The best thing we can say for them is that they eat each other as readily as they eat corn, thus limiting them to one per ear. They also like tomatoes so much, they are called tomato fruit worms when on that plant, and they attack several other vegetables.

For corn, *mineral oil* is the remedy. Apply half a dozen drops per ear, at the base of the silks where they enter the ear, after they have gone limp and started to turn brown. For other plants, hand-pick worms, or use a *rotenone dust.*

Cucumber beetles

There are two kinds, striped cucumber beetles, and spotted cucumber beetles, both about ¼ inch long. The striped one has three black stripes on a yellowish background; it eats melons and squash as well as cucumbers, dining on anything—leaves, stem, fruits—above ground, while its larvae eat the roots. The spotted beetles are greenish yellow with a dozen black spots. They also eat melon, squash, and cucumber plants, but specialize in eating the blossoms. They also attack foliage and pods of beans.

Hand-picking is a good control if done deftly, as beetles are quite active. A short board laid on the soil attracts the beetles, and when they hide under it you can find and destroy them. Dusting plants with *rotenone* or *pyrethrum* is sometimes a good control.

Cutworms

These fat, soft worms always curl tightly when discovered, and they are usually discovered in the soil just under the surface, though some kinds climb plants. The curling is the sure identification; sizes vary from less than ½ inch to over 1 inch long, and colors range through whitish to black, with grayish, brownish, and greenish in between. The sign of a cutworm in the vicinity is a young plant cut cleanly off near its base, or of leaves cut off near the stem. Most damage is in the early part of the season.

A way to prevent cutworms from getting at a young plant is to surround it with a paper collar of light cardboard. The collar should go 1 inch into the soil and be 2 inches above it, and roomy enough to clear the stem by ½ inch all around.

When you see cutworm damage, stir the soil shallowly all around the plant, from the stem outward a few inches, and you'll often find the culprit, or sometimes two of them. Boards laid on dampened soil sometimes lure cutworms under them, and you can search and destroy.

Damping-off. This is a fungus disease that sometimes kills seedlings, especially those being grown indoors. If you find very young plants suddenly fallen flat, it is from damping-off. It occasionally makes seeds decay in the ground, never sprouting at all.

Prevention is the only weapon. You can treat seed with one of the powdered fungicides available from garden suppliers for this purpose, or you can do something to discourage fungal growth in the seeding mixture. Using 1/3 compost in the mixture will do this. If you don't have compost you can discourage fungi by topping the seeding mixture or the outdoor seed bed with a ¼-inch layer of sphagnum moss, well shredded, or of vermiculite. Plant the seeds in this layer, and cover them with more of the same.

Two other methods are to sterilize the planting mixture, as by flooding it with boiling water, or to do so by baking it in a 350°F. oven for two hours, but we don't like either procedure as well as the others we've mentioned.

Downy mildew. This incurable fungus disease harms lima beans and some of the vine plants by reducing the number of their leaves. Cucumbers, cantaloupes, and sometimes watermelons are affected. Yellowish brown spots appear on the leaves, which curl and die.

After you learn how to identify the disease, carefully remove and destroy as by burning any other diseased leaves as soon as you notice them, to stop the life cycle of the fungus.

Earwigs

Brown or black, and very active when disturbed, these insects are identified by the pincers at the end of the abdomen (though females of one common species lack pincers). Some earwigs have wings, some don't. Earwigs cluster in tight places, as between two boards, or between a board and the earth, and avoid daylight. They are sometimes classed with beneficial insects because they prey on aphids and some other sucking insects, but as far as we're concerned they are pests, eating any part of succulent young plants, such as young lettuces, with gusto.

Since earwigs like to gather under boards, you can trap them under one laid on the soil. They are fast, though, and you must catch them quickly when you uncover them. A surer way is to spread a little commercial earwig bait under the board. They eat it and die, and nothing else is harmed.

Flea beetles

Both active and small (about 1/16 inch long), you may not notice these jumping insects themselves but you can't miss their damage. They make numerous small round holes in leaves, especially those of young transplants of tomatoes and peppers.

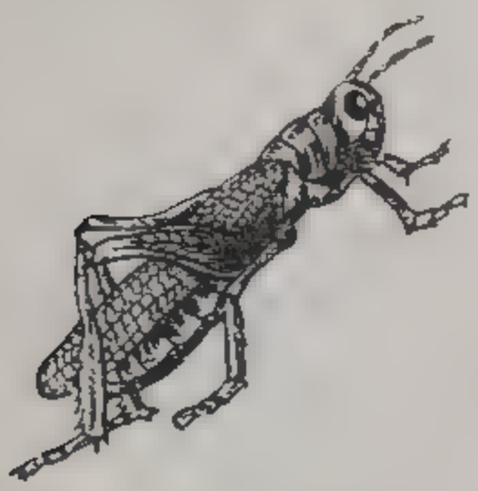
Prevent a build-up of these pests by keeping down weeds both in the garden and near it. A dusting with *nicotine*, *rotenone*, or *pyrethrum* sometimes helps. Hit both sides of the leaves with it.

Fusarium wilt. This is an incurable fungus disease that attacks tomatoes and sometimes hits peas. In both cases the leaves gradually turn yellow, and wilt. Plants don't always

die, but they are crippled. The fungus in this case attacks through the plant roots, and lives on in the soil from year to year.

Use of resistant varieties, if available, is the only solution to this problem, though it is not present in every locality.

Grasshoppers



The Biblical plagues of locusts were grasshoppers, and they are still working on gardens. They eat plant parts, any parts.

Hand-picking gives fair control of grasshoppers, but the best control is by predators such as birds, and mantids. And the blister beetle, as we said, eats grasshopper eggs, which are deposited on the soil in the late summer.

Harlequin bugs

These insects belong to one of the many species of stink bugs, and like most of them it has a shield shape. Its colors are vivid—yellow, red, and black—and it is about ½ inch long. Its victims are cabbages and related crops. Look for wilting plants, the leaves brownish and looking cooked.

Hand-picking is a practical small-garden control. Use gloves, to keep the stink bug smell off your hands. You can also trap these bugs under boards laid on the ground; and by keeping weeds out of the garden and vicinity, you'll reduce the chances of having harlequin bugs at all.

Japanese beetles

As adults, these destructive insects are green beetles, ½ inch long, with brown wings. In the larval stage they are white grubs that live in the soil, about 1 inch long, and with brown heads. Both are destructive, the beetles eating leaves of beans, okra, and corn and corn silks, and the grubs eating roots of anything.

Hand-picking and spraying with *rotenone* is of use in light infestations, but the best control has been a biological one that gives the grubs a fatal illness, the milky spore disease, and thus breaks the breeding cycle. A well known brand name for this control is Bug Doom. We list suppliers in Chapter 9.

Leaf hoppers

If you see one leaf hopper, look again and you'll see dozens if not hundreds. There are many kinds, all wedge-shaped and active, able to jump far and to fly. Green is a common color, but there are brown, yellowish, and spotted ones. They suck plant juices, like aphids, working on the undersides of leaves. Leaf hoppers don't always do much damage in a garden, but they can sometimes be a disaster. They also spread a disease called yellows, listed further on. Plants subject to leaf hopper attack include beans, celery, eggplants, lettuce, potatoes, and tomatoes. Curled leaves with dark tips is evidence of leaf hoppers' having attacked.

Dust with *sulfur*, or spray affected plants with *pyrethrum* or *rotenone*.

Leaf spot. Muggy weather is when this disease may occur. We mention it not because it is one of the most serious problems, but because it is fairly common, and so it is just as well to know what it is like. The evidence is the appearance on leaves of small, light-colored spots with dark rings around them. Chard plants are attacked, as are their cousins the beets, and so are cantaloupes and cucumbers, tomatoes and peppers.

There is no satisfactory control, but by keeping weeds cleared out, you may keep leaf spot from building up greatly.

Maggots

A maggot is a fly in the larval stage. It looks like a small, whitish grub without legs, and in a garden its business is to eat away the roots of young plants and tunnel up into the stems. This either kills the plant or badly stunts it. Not every plant in any one planting is necessarily attacked, however. The vegetables most likely to be hit are cabbages and some of their relatives such as broccoli, radishes, turnips, and mustard; and onions and some of their relatives such as shallots and leeks. Beans and peas may be attacked, and so may corn, beets, and potatoes. The flies that lay the eggs that hatch the maggots look much like house flies but are not as active.

A time-honored defense against maggots is tarpaper. You cut a 3-inch square of it, punch a hole in the middle, and make a cut from one side of the square to the hole so that you can slide the square over the base of a plant's stem, forming a little tarpaper rug on the soil around the plant. Sometimes this works. Dusting the soil around plants with wood ashes seems to work for some gardeners. Others spread seaweed (kelp) around susceptible plants. Frankly, we are still waiting for a good solution. Meanwhile we suggest you use succession planting, as the maggot fly has her busy times and her non-busy times, and so some plantings will be free

from her attack. And, luckily, the larvae of the rove beetle prey on maggots.

Mexican bean beetles

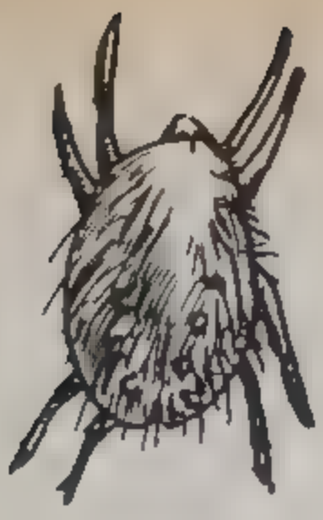
What looks like a slightly larger ladybug will be a Mexican bean beetle if you should find it eating a bean leaf or pod. It is about ¼ inch long, copper-colored, with 16 black spots. Its larvae, often found eating along with it, are a little larger and look like tiny yellow hedgehogs. Both larvae and adults work on the undersides of leaves, leaving them looking like nets (skeletonizing).

Hand-picking is a control. Also check for eggs, and crush them. They are orange-colored and will be in groups on the undersides of leaves. A spray of *rotenone* or *pyrethrum* on the undersides of leaves is also helpful. Sanitation is important—promptly remove bean plants when they finish bearing, and burn them if bean beetles have been a problem.

Millipedes

These many-legged creatures made up of many segments eat some roots but are mainly scavengers. However, they can be a problem if they overpopulate. You'll find them in moist places, as under stones. They are brown or gray, and curl tightly when disturbed. They look a good deal like centipedes, listed previously among helpful insects, but millipedes have cylindrical bodies, not flat, and to double-check it, look at their legs with your magnifying glass. They have *two* pairs per segment. Set a few flower pots or stones here and there in the garden, and destroy the millipedes you find under them each morning. Or pour a *pyrethrum solution* on them.

Mites



These tiny sucking pests are related to spiders and are usually called spider mites or red spiders. Some *are* reddish, but there are green ones and yellow ones too. They make leaves curl and become speckled. They are also helpful mites that prey on these destructive ones. The pest mites attack several vegetables, such as melons and cucumbers, beans and peas, eggplants, tomatoes, onions.

A jet of plain *water* is one of the more practical controls for the small garden. For any severe attacks, spray with *rotenone* or *nicotine.*

Mosaics. These are diseases caused by viruses. Mottled and wrinkled leaves are a symptom, and plants are stunted, crops small. Striped cucumber beetles give the disease to cantaloupes, squash, and cucumbers. Aphids are carriers also, and other plants that get mosaics are tomatoes, peppers, potatoes, beans, and lettuce.

Control aphids and striped cucumber beetles, and if you catch the trouble early, use a *skim milk spray.* Otherwise, remove and burn affected plants. In addition to other sanitation, such as keeping weeds out of the garden, don't smoke tobacco in the garden, and if you have handled tobacco, wash your hands before going to the garden. This is because the tobacco plant is also attacked by a mosaic that may be transmitted to tomato and pepper plants in your garden through tobacco you handle.

Nematodes. What you see is not the nematode, which is a microscopic worm, but the damage. Plants are stunted, and there are swellings (galls) up to 1 inch across, on the roots. These galls contain nematode eggs. Many plants are suscepti-

ble to nematode injury, but this doesn't mean your garden is sure to suffer. Though nematodes are found in other regions also, they have been more of a problem in the South.

At least some kinds of nematodes cannot live in the vicinity of marigolds, so planting marigolds in your garden may be a control. Plant them 3 feet apart, among the other plants. The control takes effect the *following* year, if it works, and lasts for two or more years.

Potato bugs

These yellow beetles with black stripes eat leaves of potatoes, tomatoes, and eggplants. The beetles are 3/8 inch long, and their humped, reddish larvae, ½ inch long, also eat leaves. Between them, they can quickly destroy a small planting.

Hand-picking is a good control, and while doing it, crush any eggs you find on the leaves. Dusting with *rotenone* is also usually effective.

Powdery mildew. Peas often get this fungus disease before they finish bearing, as do cucumbers and melons. It shows up as a white coating on the leaves, with black specks on the white later on. The disease weakens the plant.

Powdery mildew can sometimes be kept in check by removing affected leaves early in the attack. If this does not succeed, remove the entire plant to protect others and to break the breeding cycle. Burn such plants or leaves.

Red Spiders. (See Mites.)

Rust. Also a fungus disease, this one raises brown or black blisters on bean leaves, which fade and drop, reducing the harvest.

Sanitation is important, as the fungi survive till the next season on dead plants. Burn all affected plants. In early stages of attack, spraying with *garlic solution* or *sulfur* may kill the fungi. Some varieties of beans are resistant to rust.

Seed decay. This fungus disease rots seed in the soil before they can sprout, much as damping-off can do. It is worse in cool, wet weather. Vegetables most susceptible are spinach and peas, and early plantings of beans and corn.

Prevention is possible by treating seed with a fungicide before planting. Captan is one, and any fungicide sold to prevent damping-off will also prevent seed decay.

Slugs and snails

A slug is the same as a snail but has no shell, and both are mollusks, as are oysters. Both are also voracious eaters in the garden. They favor tender plants like lettuce, but will eat anything. They do their traveling at night, moving in daylight only in the interior of a plant. When they cross a leaf or a dry surface such as wood, they lubricate their path with a secretion that leaves a shiny trail, whereby you know they have passed that way.

The need for lubrication in traveling also provides a control; snails and slugs avoid dry sand, ashes, sawdust, and hydrated lime. A band of any such dry material around a planting is a barrier. Hand-picking is effective, especially in small gardens, and boards laid on moist soil will attract slugs and snails, so that you can find them and destroy them. Commercial bait placed under the boards will also do the job.

Smut. Lumpy white growths on corn plants and on ears of corn are caused by a fungus. Another kind raises dark blisters on onion leaves, but both are called smut.

There is no cure for smut, but you can help stop future attacks by recognizing it and promptly burning any affected plants. Handle them carefully to avoid scattering fungus spores.

Sow bugs

Like their relatives, pill bugs, these are not insects, but are isopods, an order that includes lobsters. Pill bugs roll into little balls when disturbed. Both look something like tiny, many-legged armadillos. They hide under rocks, wood, etc., and their damage, though not usually serious, is unwelcome because it is often directed at seedlings. Pill bugs are more persistent. We have caught sow bugs eating strawberry fruits, but for the most part both sow and pill bugs are just scavengers.

Control these bugs by destroying them when you find them, if you feel they are doing enough damage to be worth the trouble. We have never felt very strongly about them.

Spider mites. (see Mites.)

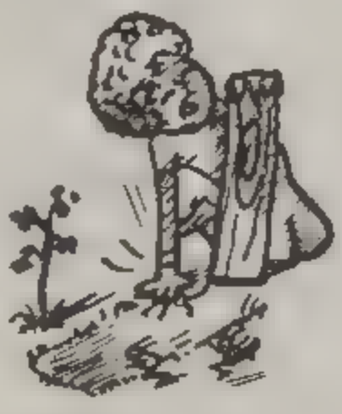
Spotted cucumber beetles. (See Cucumber beetles.)

Squash bugs

These brownish-yellow stink bugs, from ½ inch to ¾ inch long, are a menace to vine plants—squash, cucumbers, pumpkins, cantaloupes, and watermelons. If you see one of these plants wilting, suspect squash bugs. If they are there,

you'll smell them too. They do their damage by sucking plant juices. However, they don't come in hordes, like aphids.

Hand-pick squash bugs (wear gloves), and crush them. Boards laid on the ground are a good lure if you remember to look under them each morning. Also look on plant leaves for the eggs, and crush them. They are brown ovals, laid in clusters. If you want to spray, use *garlic* or *hot pepper solution.* Good garden sanitation also helps, so remove old vines after they stop producing enough to matter, and if squash bugs have been a problem that season, burn the vines instead of composting them.



Squash borers

A handsome metallic-green and red moth is the adult stage of another vine plant villain, a 1-inch white grub that bores into the stems of squash and pumpkin plants. A wilting plant is the symptom of possible borer damage, just as it is with squash bugs, and if you don't do something about it, the plant will very probably die. Pumpkins and squash are the borer's favored plants.

A *rotenone dust* can be used, but a better method is to dig the grub out. To find him, look along the stem of the plant near its base for a hole. Then carefully split the stem on that side with a knife, just enough to trace the borer, and stab him. You can remove him or leave him. Then pile earth on the stem and it will put out new roots at that point. We have heard of another way to handle the borer—by pushing a clove of garlic into the stem at the point where the borer entered, then piling earth on the stem.

Stink bugs

We have already mentioned some specific stink bugs, such as harlequin and squash bugs. They and about 5000 other species belong to this family of insects. Most have the characteristic shield shape, the unpleasant smell which they make with glands, and are often brightly marked with green, orange, white, brown, or black. All are juice suckers, and they attack many different vegetables.

Hand-picking is generally the most effective control in a small garden. Rubber gloves are best for this chore. Keep the garden area free of weeds, as stink bugs congregate on them.

Striped cucumber beetles. (See Cucumber beetles.)

Thrips

If you could get a good look at a thrip's wings, you'd find they were fringed. The trouble is, 25 thrips placed end to end reach only one inch in length, so seeing their wings very clearly isn't easy. Also, they don't hold still, and in fact are known for their activity as they go about sucking plant juices. Though many kinds of thrips are helpful, preying on their harmful relatives and on mites and aphids, the bad ones have given all of them a bad name with gardeners. Plants most often attacked are cabbages and related vegetables, onions and their relatives, and the vine crops such as squash. Symptoms to keep an eye out for are leaves splotched with white and showing browned tips. Spray or dust plants with *nicotine*, *rotenone*, or *pyrethrum.*

Tomato fruit worms. (See Corn earworms.)

Tomato horn worms

The large larva of a large moth, this green worm can grow to as long as 4 inches, and looks absolutely dangerous with its thorn-like horn sticking up from its back end. The horn is strictly for scare effect, however, and is harmless. But very handy for identifying the worm, which is a greedy devourer of leaves and fruits of tomatoes, peppers, and eggplants. Look for skeletonized leaves.

Hand-picking is effective, as there are never a great many horn worms in any one garden. Also, they have enemies such as wasps. And if you see a horn worm wearing a lot of tiny white eggs, let him alone; the eggs are parasites that will hatch out, feed on him, and multiply.

Verticillium wilt. Tomatoes get this fungus disease, though not every variety is susceptible. As with fusarium wilt, the symptom is a wilting of the plant, but with verticillium wilt, all the branches are affected at once. The plant may continue to live, but will not be thrifty.

No cure exists for verticillium wilt, but you can avoid it by planting resistant varieties. The fungus lives in the soil. Affected plants are best removed and destroyed.

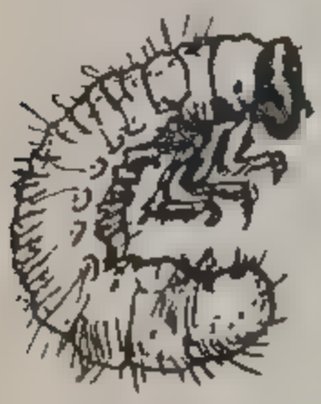
Weevils

These are beetles, and the ones we are concerned with here aren't the ones sometimes found in dry foods (which is then said to be weevily), but various kinds of beetles that attack many garden plants. They are usually dark-colored, vary greatly in size, from 1/8 inch long to about ½ inch, and many of them have snouts, with which they feed. The larvae

feed inside stems and fruits of vegetables; the adults, outside. Favored plants are cabbage and related vegetables, beans and peas, peppers, turnips, and carrots.

Dusting with *rotenone* may give satisfactory control. Hand-picking is also effective if infestation is not too heavy.

White grubs



These are larvae of the brown beetles called June bugs or May beetles, and also of those big green beetles often seen around fresh manure. The grubs live in the earth, especially under lawns. They are white, with dark heads, the bodies curved, and are familiar to most gardeners because they are often found when the ground is spaded. They eat roots and tubers.

Kill any grubs you find when digging. If they are abundant, plant your garden somewhere else. The grubs die out in about two years if soil is spaded up and kept that way.

Wilt. This term covers several plant diseases caused by fungi of various kinds. The symptoms are wilting, plus yellowish leaves and stems, and stunted growth. Plants most often attacked are the cabbage group, watermelons, eggplants, okra, and corn. If potatoes get wilt, the tubers may look all right but will store poorly, developing dry rot.

Wilt is incurable, and since the fungi live on in the soil, don't plant susceptible vegetables where wilt has occured. Or use resistant varieties if available.

Wirestem. The name of this fungus disease, which attacks cabbage and related plants, comes from the appearance of the ailing plant's stem near ground level. It shrivels and turns dark.

The fungi live in the soil and there is no cure for this disease. However, if you promptly remove and destroy affected plants, the others in the same planting may escape

infection. This procedure has worked fairly well for us.

Wireworms

If you dig up a slender yellowish worm, about 1 inch long or more, with a brown head, and made up of several segments, it will very likely be a wireworm. The name comes from a notion these insects look like bits of wire joined together end to end. They bore into underground parts of many vegetables, including beets, carrots, turnips, potatoes, onions, beans, celery, and lettuce.

Avoid planting where wireworms are present. If this isn't possible, you can destroy them when found, and can trap others by planting some chunks of potato a few inches deep. Spot them in several places, then dig them up a few days to a week later, destroy any wireworms in them, and repeat the operation at other spots in the garden with more potato chunks.

Yellows. This term refers to two different diseases that produce the same symptoms twisted, yellowish leaves and stunted plants. One yellows is a fungus disease, and attacks celery, spinach, and the cabbage group. The other yellows is a virus disease spread by leaf hoppers, and it attacks carrots and lettuce.

For the fungus type of yellows the only course is to choose resistant varieties if available, and avoid planting in soil where the disease has occurred.

Control of the virus type of yellows (which also attacks asters) lies in how well you can control leaf hoppers, which we have already covered.

Chapter 4

Midget Vegetables and How to Grow Them

As we have already mentioned, a midget vegetable is one that is smaller than a standard, or regular-sized, vegetable, both in plant size and in the size of the part you eat. There are seventeen such genetic (bred-to-be) midget vegetables available, and in this part of the book we will tell you how to grow each of them. In addition, though, we are also doing the same for about as many standard vegetables. Why?

Because each of the standard vegetables discussed here is small or can be kept small so that it fits snugly into a midget vegetable garden. And by growing some of these, you increase your midget garden's attraction and value. For these same reasons we are also covering a group of good cooking herbs. And there are a few little surprises tucked in here and there, to make your midget-gardening even better. (And see Chapter 6 for some more.)

If you are new at gardening, maybe it will help if we mentioned some terms you'll keep running across here. We've touched on some before this, but a reminder now may help keep things straight.

One term is *variety*. All midget cabbages are cabbages, for example, but Little Leaguer cabbage, Pee Wee cabbage, and Junior cabbage are each different varieties.

The word *hybrid* will also show up frequently. A hybrid is a new variety that was produced by mating two other varieties, each of which had some good traits that were then combined in the hybrid.

All-America is a term of praise because it specifies a

vegetable that was singled out in national competition by an organization the nation's seedsmen sponsor, All-America Selections.

Growing time is a general guide to how long it will take a vegetable to mature a crop. It is not an exact guide even though you'd think so from the way seed catalogs give it in days rather than weeks. Your climate, soil, care, and also luck will all affect growing time, so don't take it literally. And keep another point in mind—when growing time is given for a vegetable normally started ahead of outdoor planting, such as tomatoes and peppers, the time is figured from when the plant is put in the garden. For any vegetable seeded directly in the garden, growing time is from the day the seed was planted to the day you can harvest the ripe produce—peas, watermelons, beets, etc.—whether you take the entire plant, as with a beet, or whether the vegetable keeps on bearing, as with peas.

Matures or *maturity time* mean the same as growing time does.

Bush refers to a compact variety of some vegetable that also comes in varieties that grow out along the ground ("vine" types), or need some kind of aerial support ("pole" types).

Since pests and control measures were covered in Chapter 3, we do not go into detail on them here.

One other point: For each midget vegetable variety, and for some hard-to-find standards, we mention the seed houses carrying them: Burpee, Harris, Burgess, Farmer, etc., so that you won't want something and then have no idea where to get it. You'll find the complete names and addresses of these suppliers in Chapter 9.

LIMA BEANS

There is as yet no midget lima bean, but bush limas come in compact enough plants to qualify easily for the midget garden. When reading catalog descriptions, however, note the height of plants carefully, since some bush limas grow to 2 feet or higher.

Three good bush limas for the midget garden are: Baby

Fordhook, Henderson, and Thorogreen. None will grow much over 12 inches high. Baby Fordhook, a 70-day bean, bears small and plump beans, the "potato" type of lima. Henderson and Thorogreen bear small flat beans. Henderson, 65 days, is the oldest variety of lima on the market, discovered about 100 years ago growing on a roadside in the South. It is tolerant of hot, dry weather. Thorogreen, 68 days or less, could be called an improved Henderson, as it is a selection of Henderson. This means the original Thorogreen plant grew from a Henderson seed but was different enough from its brothers to be selected for special attention as a new variety. Burpee lists Baby Fordhook, and the other two are carried by many seed houses.

To be practical, you need about 90 days of warm weather to get the most from these three limas, since they keep on bearing for three or four weeks after they start.

Plant them in a full-sun spot *after* the weather has warmed up. They like rich soil, so work in compost and 1 cup of cottonseed meal for each 6 to 8 feet of row. Plant seeds 1 inch deep, and space them 6 inches apart; allow 18 inches between rows. A packet of seeds will plant about 20 feet of row, and with limas it is best to plant seeds with the dark spot, called the eye, pointing down, to help sprouting. Growth is also sometimes helped by pre-treating seed with an inoculant. Most seed houses carry it; one brand name is Legume Aid. Unless your soil is poor, further fertilizing isn't usually needed, but if plants don't look growthy to you when half-grown, give them soluble compost at the rate of ½ cup per plant.

Limas can be picked before the pods are completely filled out, but unless you're racing the ending of summer it is better to let them fill out, for a bigger harvest and full flavor.

Downy mildew may affect limas in wet weather, especially if days are hot and nights cool. Mexican bean beetles may be a problem, as may mites, flea beetles, and leaf hoppers. Other bean pests are less likely to cause trouble.

SNAP BEANS

Like bush lima beans, bush snap beans are compact enough

to fit a midget garden. Although top growth may reach to 1½ feet or so, the bulk of the bush is in the first 12 inches, and the weight of the pods keeps the bush low. We have raised them in planters, happily shared with herbs. Another interesting point about these beans is that you can get them in three colors of pods—green, yellow, and purple. Bush snap beans mature faster than bush limas and don't need as warm weather to produce well.

Green-podded varieties. Burpee's Tenderpod, a 50-day bean, is especially tolerant of poor weather, along with being a well-flavored bean, a good producer, and a nicely compact plant. It is an All-America winner. Two other good varieties, widely available, are Blue Lake, 58 days, and Wade, 56 days. Blue Lake is famous for good flavor, and bears over a long period, but does grow a little taller than Tenderpod. Wade, a U.S. Department of Agriculture development, bears heavily, has good beany flavor, and resists powdery mildew and mosaic.

Yellow-podded varieties. Among the several yellow snap beans, also called wax beans, Cherokee, Pencil Pod, and Kinghorn are popular. Cherokee is another U.S. Department of Agriculture development, and an All-America winner. A 50-day bean, it produces well and will take more hot weather than some snap beans. Pencil Pod Black Wax is the full name of a good 51-day bean, the black in its name referring to its bean color, not the color of its pod. It will take hot, dry summers well. Pods are pencil-round (though curved), and tender. Kinghorn is an old yellow variety, 55 days, a good producer and popular for freezing. It has white seeds.

Purple-podded varieties. The variety nearly all seed houses carry is Royalty, 51 days. The deep purple pods turn green when cooked. Royalty has two advantages worth remembering: Bean beetles usually detour it; and it is so hardy and germinates so well that you can plant it earlier than other varieties. Royalty's flavor is good and it produces heavily.

Plant snap beans after danger of frost is past, the same as limas, but snap beans, especially bush snap beans, will do well in summers too cool for limas. Seed them as you do limas, but you can put snap beans closer, about 3 inches apart in the row, and if your soil is not heavy clay, the seeds can go a

little deeper than limas, about 1½ inches. Care for the plants as you do limas. Snap beans bear their crop over a shorter period than limas do, so if you have the space, make a new planting every two weeks (the last one two months before frost is expected) to spread the harvest.

Snap beans may have the same troubles as limas. Very warm weather or excessive rain may cause some dropping of blossoms, and this can also happen if the plants get too much nitrogen.

BEETS

A fresh beet from the garden is a delicacy, butter-tender, richly flavored. But it must be grown quickly to achieve this perfection.

At present we know of only one midget beet. Its name is Spinel (Breck's, Field, and Nichols), and it was developed in the Netherlands. It is a 50-day beet, though it may take up to 10 days longer in some localities to reach its mature size, 1 inch wide. Spinel is a deep red, and small enough to be served whole—one of the reasons it was bred, for use in fancy European restaurants.

We'd like to mention one other beet that would fit into a midget garden even though it is a standard size. It is Ruby Queen, an All-America winner, 56 days, and though its round red roots are normal beet size, about 3 inches wide, it grows short tops, only 10 inches high. Most seed houses list Ruby Queen. All beet leaves are good to eat, as you probably know, and more nutritious than the roots.

Beets do best in spring and fall. Make the first planting in early spring, a month before the last frost. Make other plantings every three weeks until early summer, for a continuous crop. Then plant again in late summer. Beets will grow in partly shaded places if necessary.

Prepare a fine seedbed for them so the roots can grow freely. If your soil is much too acid for beets, they will grow poorly; most garden soils seem to suit them, but if a test shows yours with a pH lower than 6.0, or if beets have done poorly there before, work a coffee can of wood ashes or 1/3 cup of hydrated lime into each 6 to 8 feet of row, two weeks or more before you plant the seeds. Then, before planting,

work compost into the soil, and ½ cup of cottonseed meal for each 6 to 8 feet of row.

Plant the seeds ½ inch deep. Space Spinel seeds 1½ inches apart, and Ruby Queen, 4 inches. It is especially important to keep beet seeds moist once they are planted. Each beet seed is really a capsule containing two or more seeds, so be sure to thin the seedlings. You can delay this thinning until the leaves of those you take are big enough to cook, though this may slightly slow growth of the ones left.

Despite several potential pests, home garden beets are not ordinarily much bothered.

CABBAGE

Cabbage seems to have intrigued the midget-plant breeders. There are at least five varieties on the market: Little Leaguer (Burpee, Farmer, McFayden, Park, and Shumway), Baby Head (Field, May, and Stokes), Pee Wee (McFayden), Junior (McFayden), and Miniature Japanese Ornamental (Nichols).

Pee Wee, Little Leaguer, and Junior are called the baseball series by their originator, Dr. Charles Walkof, head of the Vegetable Section at the Canadian Department of Agriculture Research Station, Morden, Manitoba. Pee Wee is really tiny, only ½ pound, little Leaguer weighs 1 pound, and Junior, 1½ pounds. Little Leaguer and Junior mature in 60 days, Pee Wee, a little sooner. A nice feature about them is their willingness to wait until you are ready to harvest them. Many cabbages will split if harvesting is delayed much beyond maturity. And, of course, you can harvest a cabbage *before* it is mature, if you wish.

Baby Head, 70 days, runs from 1 to 2 pounds—still quite small compared to most standard sizes—and is rated very well on flavor.

Miniature Japanese Ornamental, 65 days, is both decorative and good to eat. The green leaves are tinted with deep red shades. The little heads reach their peak of attraction after summer is over and the weather is chilly, so plan on this variety as a fall crop in the North and a winter one in the South.

For the early cabbages in the North, seed is usually started

indoors as for tender plants, about 2 months before the last spring frost, and plants are moved to the garden a month before the frost. Late crops can be seeded directly in the garden, in late summer.

Though a cool, moist climate is the one cabbage likes best, it is an accommodating vegetable and grows well over a wide range of climates. It isn't choosy about soil, either, but likes compost well worked in, and can do nicely with average fertilizing, about 1 cup of cottonseed meal for 6 to 8 feet of row.

The smallest midgets can be spaced as close as one every 6 inches and the others 8 inches or 9 inches apart. Rows should be 12 to 15 inches apart.

Since cabbage roots are close to the surface, cultivate shallowly, or use a compost mulch instead of cultivating.

Cabbage has a good many pests, though some are seasonal. Maggots can be troublesome, as can cutworms when plants are young. Aphids and cabbage worms are easier to control. There are a number of cabbage diseases, for some of which sanitation is the most practical weapon.

CHINESE CABBAGE

Chinese cabbage is related to regular cabbage, though you might not guess this from its taste. Chinese cabbage is more like a salad green, especially its tender heart leaves, and even the outer leaves have but little cabbage flavor. Typical Chinese cabbage shape is not cabbage-head but more like cos lettuce.

There is no true midget Chinese cabbage but there are some varieties that grow short enough to qualify for the midget garden. Three that deserve your attention are Crispy Choy (Burpee), Early Hybrid G (Harris), and Springtime (Stokes).

Crispy Choy, an improved Pak Choy, grows to be only 8 inches tall. The heads are not tight, and outer leaves can be stripped off for use, if wished, before the plant matures. It matures quickly, however, in 45 days. Early Hybrid G, 50 to 60 days, is short, broad, and tightly bunched. Developed in Japan, it has the reputation of not bolting to seed quickly

after maturing. Springtime, 60 days, is also slow to bolt and is chunky; the 10-inch-tall heads average about 3 pounds. It also is a hybrid.

Chinese cabbage responds to the same soils and fertilizing as regular cabbage, and wants plenty of moisture. A feeding or two of soluble compost while the plants are in their early growth will help speed them along. Space plants about 12 inches apart.

Chinese cabbage is not usually grown as a spring crop—though the variety Springtime is an exception. Most varieties will bolt to seed in warm weather, so are grown as fall crops. Transplanting also causes bolting, so the best plan is to seed it in the garden where it will stay. For the varieties we mentioned, do this seeding about two months before the first fall frost.

Although Chinese cabbage may be attacked by many of the same pests that bother other cabbage, it often is surprisingly free of them. Aphids, cabbage worms, and cutworms are the most likely, if any do appear.

CANTALOUPES

There are four nice midget cantaloupes on the market, and more are expected. These little fellows fit as snugly into a hand as a softball—about 4 inches wide, sweet and solid, having thin rinds and small seed cavities.

Minnesota Midget (Farmer, Gurney, and Park) came from the University of Minnesota's Department of Horticultural Science, where Dr. Andrew Duncan has done outstanding work in midget development. Minnesota Midget ripens in 60 days and is surprisingly productive considering that its little vines don't grow much longer than 3 feet. The flesh is orange and is well flavored.

Farnorth (Farmer) is a Canadian development, not as fast as Minnesota Midget and not as compact a grower, but a good possibility for midget-gardening just the same. It is, as its name suggests, adapted for short seasons. Fruits run 4 to 5 inches wide and are sweet and juicy.

Mini (Burgess) grows a vine only 2 feet long or less, making

it the most compact of all. It is a 60-day cantaloupe, and resembles Minnesota Midget.

Midget (Shumway) appears to be identical to Minnesota Midget in vine and fruit size.

Cantaloupes can be started indoors and moved to the garden 3 weeks after the last frost. For outdoor seeding, wait for warm weather, or seed under a Hotkap after the last frost.

Plant these midgets in hills spotted about 3 feet apart, and when preparing the soil give each hill up to a bushel of compost, well spaded in, along with 1 cup of cottonseed meal. In addition to feeding the plants, the compost will help hold the moisture that cantaloupes demand. Plant 5 or 6 seeds in each hill, in a circle about 8 inches across, and thin to 3 or 4 of the best plants about a week after the seeds have sprouted.

We give cantaloupes and other vine plants extra watering if we can, pouring a few bucketfuls onto the soil once a week or oftener. A mulch is also a good idea, checking moisture loss and keeping fruits clean.

The ripening times given for cantaloupes are seldom exact to the day, and the most reliable sign of a ripe cantaloupe is its arrival at the so-called "slip stage." At this stage, its stem will slip, or part, from the vine at a very slight pressure of your finger. Always try to catch your cantaloupes at their very peak of ripening perfection. This perfection is something that non-gardeners practically never taste.

Aphids and cucumber beetles may bother cantaloupes, along with less frequent pests, and diseases such as bacterial wilt and leaf spot. Control depends heavily on sanitation, and other measures are given in Chapter 3.

CARROTS

If the number of midget carrots on seedsmen's lists is an indication, this healthy little vegetable must be nearly as popular as tomatoes with the American public. However, we think some of the midget varieties are different from others in name only. Not many midget carrots are faster growers than standards; the midgets' appeal is in size, often a special delicacy of flavor, and in some cases a decided sweetness.

Famous in France, Red Apple (Breck's) is a chubby little thing as wide as it is long, about 1½ inches, sweet, and very pretty cooked whole and served in a ragout. It matures in 65 days. Gourmet Parisienne (McFayden) appears to be identical, and so does Gold Nugget (Farmer).

Sucram (Breck's and Nichols), 50 to 70 days, is about ¾ inch wide for nearly its entire length of 5 inches or so. It is also a European development, from the Netherlands, and is very sweet. Baby-Finger Nantes (Stokes) looks like a smaller Sucram and is also from Europe. It is quite tender and grows unusually small tops. Maturity time is 50 days, and succession planting is advisable, since this variety is at its tender best if harvested promptly when just barely mature. Sugarstick (Field) appears similar to Baby-Finger Nantes, but matures in 65 days, as does the similar-looking Midget (Gurney). Little Finger (Burpee) is a 1973 addition to their midget listing, which had been concentrated on their Short 'N Sweet, 68 days, a virtually coreless little carrot in a stubby cone shape about 2 inches wide at the shoulder, and 4 inches long. Also cone-shaped but not as chunky is Tiny Sweet (Burgess, Farmer, Park, and Shumway), a 3-inch-long carrot that matures in 65 days.

Carrots will get along in a site with partial shade, or with somewhat less sun than cantaloupes need. Carrots can be seeded beginning a month before the last spring frost, and like beets, can be seeded every three weeks until early summer. Since they don't thrive in midsummer, wait until 2 months before the first fall frost and then make a sizable planting. This will keep you in fresh carrots for a good while, as they will "store" themselves in the soil where they are growing, needing no protection except in winter weather, when a 6-inch mulch will do it.

Spade soil well for carrots. Midgets are not so critical about this as are standards, but no carrot likes to meet stones and other obstructions in the soil, and will twist and fork trying to avoid them. Plant seed ½ inch deep, and thin seedlings to stand 2 inches apart for Short 'N Sweet, Red Apple, Gourmet Parisienne, and Gold Nugget, and 1 inch apart for the other midgets. Allow 12 inches between rows.

Home garden carrot plantings are seldom bothered by pests.

CELERY

No midget celery is available, but celery is not a very tall plant, and is both attractive and useful in a little garden. The most compact variety is Golden Self-Blanching, which grows to 12 inches or 15 inches, and is a yellow celery whose wide stalks shield the heart from light, and blanch it to a creamy yellow. We prefer a green celery, though, and Burpee's Fordhook, which will usually stay under 18 inches, is a very good one.

Celery does take a long time to grow, up to 140 days, and so is usually started indoors two months or so before the last spring frost. But if your summer is long enough, you can seed celery in the garden where it is to grow, just after the last spring frost.

Celery will grow in partial shade if necessary.

You'll need a very finely prepared seed bed, and the tiny seeds should be pressed into the soil and covered only lightly. Some gardeners cover them with sand. Be sure to keep the seed bed moist during germination, which takes 2 weeks or more.

Celery is a heavy feeder, and in our experience it is avid for organic matter, so we dig compost generously into the bed as we prepare it, and add up to 1 cup of blood meal for each 5 feet of row. When the plants are half grown we give them a mulch of compost, which also helps keep moisture in the soil.

Set plants 6 to 8 inches apart. The wider spacing will grow stronger plants, but if you must crowd celery it will take it. And you can help matters by starting to use the leaf stalks early, beginning when the plants are 2 months old. To do this, bend a leaf stalk outward, then twist it slightly from right to left until it comes free, or cut it near its base. This young garden-fresh celery has a surprisingly assertive flavor, and you'll find it a wonderful seasoning addition to other dishes. It will also be crisp and stringless if the plants have grown smartly along.

Celery pests are not usually troublesome, even though there are a few, including some blights that can be bad –which is one reason we like a little wider spacing for the

plants, as it helps in garden sanitation. We have known plantings to suffer from cabbage worms and from slugs or snails, but these are not among the normal and expected problems of celery.

CHARD

Chard is one of the good leafy greens, and though there is no midget variety currently available, chard is not out of place in a midget garden. Furthermore, chard is so handsome a plant, it deserves a place in the garden. And—as we find ourselves pointing out again and again—here is another fine vegetable that few except home gardeners can enjoy at its best, for in spite of its sturdy good looks, chard is not a good shipper, and what does reach the market compares indifferently with spinach in appearance.

Although they don't look much alike, chard and beets are closely related, and chard is often called the spinach beet, or leaf beet. It is also called Swiss chard and silver beet. But chard does not form a beet-like root, and is grown only for its leafy tops—some varieties being smooth-leaved, some crinkled—and for the leaf stems, which are often trimmed out and cooked separately, so that here you get two vegetables in one.

Another point in chard's favor is that it keeps on producing. You can seed it in the garden early, about a month before the last spring frost, start taking some outer leaves about 6 weeks later, and you'll still be harvesting leaves late in the fall. It will even go through a moderate winter if you give it some protection; it won't do much growing, but will provide very early greens in the spring. As you can see from this long-season habit, chard isn't bothered by hot weather either, the way spinach usually is.

There are red-stemmed chards as well as green ones, the reds variously called Ruby, Burgundy, and Rhubarb chard. These reds are strikingly attractive, and are as much grown for decoration as for food. Some say they taste like beet leaves. We haven't thought so, and prefer the green for eating. The varieties of green chard you will find offered are most

often Lucullus and Fordhook Giant. For the midget garden, Fordhook Giant is a better choice in spite of its name, topping off at about 18 to 24 inches, while Lucullus can grow to 30 inches.

Chard plants can be spaced as close as one each 6 inches, but we give them about twice this. Like beets, chard will grow in partial shade, and you grow and care for it exactly as you do beets.

CHIVES

Chives are mild-oniony seasoning plants, perennials, and quite small enough to belong in a midget garden. They are also attractive, and have pretty lavender flowers. You can grow chives from seed, planting ¼ inch deep in the open garden in early spring, and from then on you multiply the planting by digging the clumps in early spring or early fall, pulling them gently apart into smaller clumps with up to two dozen bulbs each, and replanting. Some gardeners prefer to start with plants instead of with seed, as chive plants are offered by most nurseries. Chives will grow in partial shade.

The part of chives that you eat are the tops, the leaves, which look like stems. They are tubes. The bulbs, though edible, are not eaten, or at least we don't know of anybody who eats them. Chives are willing growers, and it almost seems that the more you harvest them, the harder they work. To harvest, cut leaves off near their bases. To use them, chop them into ¼-inch lengths and add to salads. You can also use them to flavor cooked dishes, and in this case add them toward the end of the cooking time.

A member of the onion group, chives are not offered in separate varieties, though there is an Oriental or Garlic chive. We have grown it, and Nichols carries plants of it, as does Cedarbrook. The flavor is noticeably stronger than the usual chives.

Though chives die to the ground in winter, you can plant a clump in a pot when summer ends, bring it indoors, and have chives to clip while the snow flies.

If we wanted to be awfully cautious we'd say that chives

These pretty Tiny Sweet carrots are only 3 inches long when fully mature, in 65 days, an ideal midget vegetable for either a planter or in the open garden.

—Farmer Seed and Nursery Co. photo

Midget vines, only 2 feet long, bear these nice midget cucumbers, called Tiny Dill—starting in a mere 55 days after the seeds are planted.

—Farmer Seed and Nursery Co. photo

The beautiful eggplant is now in midget sizes—lovely additions to a flower bed or as part of a midget vegetable garden.

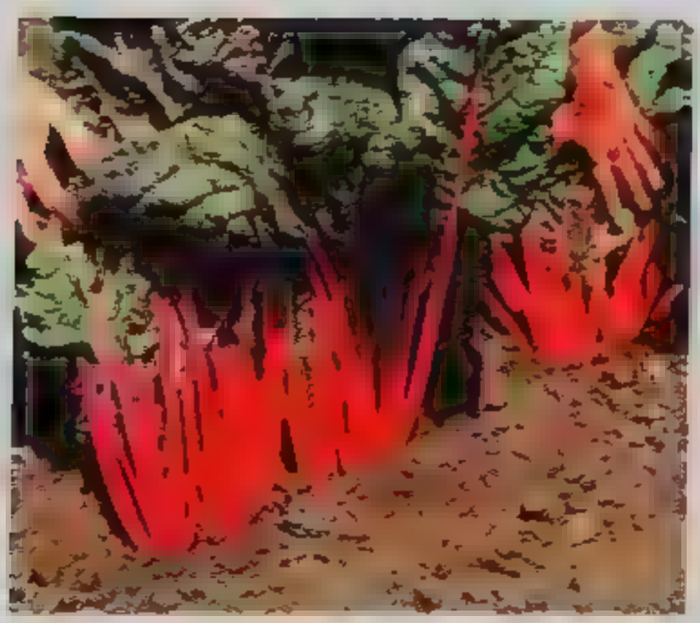
—W. Atlee Burpee Co. photo

Popular with home gardeners, these buttery little Tom Thumb lettuces are ready just 65 days from seeding, each one the perfect size for a single delicious serving.
—Farmer Seed and Nursery Co. photo

So good that it won a gold medal as an All-America selection, this neat little watermelon is New Hampshire Midget. It grows from 4 to 6 pounds in 70 days.
—Farmer Seed and Nursery Co. photo

When Golden Midget watermelon is ripe it tells you by turning from green to yellow. Inside, its exceptionally sweet flesh is the traditional red.

Farmer Seed and Nursery Co. photo



Swiss chard is a fine, productive leafy green that is at home in a midget garden. For an extra decorative note, choose a red-stemmed chard such as Burgundy, shown here.

–Farmer Seed and Nursery Co. photo

Started in a flat, these well-grown little plants are ready to be set out in the garden for early-fall maturing. They include lettuces, chard, kale, and endive, all suitable for a midget garden.

If you want to taste cantaloupes at their wonderful best, grow your own—in a midget garden. The Minnesota Midget, shown here, ripens on 3-foot vines 60 days from planting.

—Farmer Seed and Nursery Co. photo

Herbs in a flower pot, such as Dwarf Extra Curled parsley, can be kept handy to add a last-minute fillip of flavor and color to many a dish.

W. Atlee Burpee Co. photo

Golden Midget sweet corn produces these beautiful little ears on tiny plants 2 to 3 feet tall, in just about two months.

—W. Atlee Burpee Co. photo

Not only are these little winter squashes, Gold Nugget, delicious eating and good for you, but are truly a summer-long ornament in a midget garden.

—Burgess Seed & Plant Co. photo

These attractive peppers, Italian Sweet, are so mild they are delicious raw. The dwarf plants, ideal for a midget garden, bear big crops.

Burgess Seed & Plant Co. photo

Yellow Pear tomatoes, always an interesting novelty in home gardens, are one of the many varieties of tomatoes now available in plant sizes adapted for midget gardens.

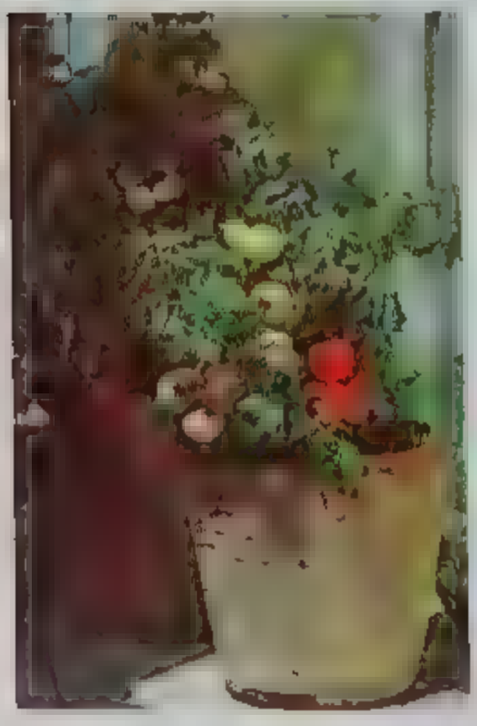
—W. Atlee Burpee Co. photo

This midget Pixie tomato, one of the newest, a hybrid that grows no taller than 18 inches, is happy in a flower pot, and bears lots of meaty red tomatoes about 2 inches wide.

—W. Atlee Burpee Co. photo

Smallest of all the midget tomato plants, Tiny Tim may get no taller than 8 inches, but can bear up to 200 cherry-sized fruits. Available in both red-fruited and yellow-fruited types.

—Burgess Seed & Plant Co. photo



Aptly named, Patio Hybrid tomato is perfectly at home in a container, a genuine part of a patio's eye appeal.

Petoseed Co. photo

A bonus comes with this midget winter squash called Eat-All. Its seeds have no hulls, and can be eaten like peanuts after they dry in the oven as squash itself is being baked.

—Farmer Seed and Nursery Co. photo

Ideal for a kitchen window sill garden, this cress—Burpee's Curly-cress—makes a zesty and edible garnish.

—W. Atlee Burpee Co. photo

Who can resist a crisp, fresh radish? These midget garden radishes are one of the best gardening projects for a child—easy to plant, quick to grow, a happy surprise to harvest.

—W. Atlee Burpee Co. photo

This window-greenhouse, available commercially, is a way to grow some midget vegetables, which can thrive indoors. It is also a good place to start tender plants such as peppers well ahead of outdoor planting time.

—Lord & Burnham photo

Dwarf okra makes a fine, well behaved plant in the midget garden, and each succulent green pod is preceded by a lovely hibiscus-like flower.
—W. Atlee Burpee Co. photo

A happy combination of container plantings on a porch, with flower pots among the vegetables. Group of planters to the right contain: snap beans interplanted with chervil at far right; strawberries in the middle; and at the left, Tiny Tim tomatoes and French basil. Planter under the window contains a selection of herbs.

have the same pests onions have, but the fact is, practically nothing bothers them.

CORN

Sweet Corn. Here again we have a vegetable with a good choice of varieties in midget size; eight varieties are offered. They include some hybrids, and there is both white and yellow corn in the group. We have nearly always chosen yellow varieties because we think they are better flavored, though not every corn lover agrees. But yellow corn is somewhat more nutritious than white.

If you want sweet corn at its finest, growing it yourself is the way to get it because you cannot buy corn fresh enough to have kept its top quality. Its sugar starts changing to starch moments after harvest—and this process is greatly speeded by high temperatures, which of course are normal field temperatures during corn picking. But a home gardener can have his roasting ears cooking within minutes after harvesting them, with all their sweetness intact.

As to varieties, the most widely listed one is Golden Midget, which has been on the market much longer than most midget vegetables. Golden Midget (Breck's, Burpee, Gurney, May Nichols, Park, and Shumway), produces nicely shaped little ears about 4 inches long and 1¼ inches thick, with eight rows of yellow kernels. They grow on tiny plants, only 2 to 3 feet tall, and mature in 65 days, or sometimes in 60 days under ideal conditions. There is also a White Midget (Burpee, Nichols, and Shumway) but the relationship is not as close as it sounds. White Midget's ears may grow to 6 inches long and have 12 to 14 rows of kernels. The plants are only 2½ to 3 feet tall, however. Faribo Golden Midget (Farmer), maturing in under 60 days, has 4-inch ears on plants 2½ feet tall.

The hybrids are Golden Midget Hybrid (Burgess), 58 days, with ears and plants much like Golden Midget; Midget Hybrid (Park), 66 days, and Miniature Hybrid (Olds'), 67 days, both being yellow corn with 5-inch ears; Golden Miniature (Stokes), 55 days, producing 5-inch ears with 12 rows of kernels; and

Early Miniature (McFayden), 60 days, with 6-inch yellow ears on plants with bronze-green leaves.

If you have space for more than one variety of sweet corn in your midget garden, select those of different maturity times so that the crop will be spaced out. If you should have a good many ears all ripening at once, though, these midgets are exceptionally good for freezing.

Corn must have warm weather and full sun, but it will grow well on most garden soils. Dig a good 4 inches of compost in when preparing the seed bed, and work in about 1 cup of cottonseed meal for each 5 feet of row. Plant seed 1 inch deep and 2 to 3 inches apart. Later, thin plants to stand 6 inches apart. Rows for midgets can be 2 feet apart, and it is best to plant any corn in 3 or 4 short rows to form a block, rather than in one long row. This is to help pollination, which corn accomplishes by sprinkling pollen from the tassel on top of the plant. It must land on the silks that stick out of each ear, in order for kernels to form, and so the wind and gravity are to corn what bees are to most plants. Block planting helps make this awfully casual way of reproduction more likely to succeed. It is also a good idea to give nature a hand by snipping off a few tassels and shaking them over the silks. Do this when the silks are standing out rather tautly, and the pollen will shake from the tassel like fine yellow dust.

Corn responds well to mulching, so give your midgets some when they are about 15 inches high. If you use compost for this, it will also fertilize the plants.

Keep track of when you planted your corn so that you know when it should be ready to harvest. It holds its quality for a few days, but don't wait very long. Feel the ears to see if they seem well filled. Dried silks are also a sign the ears are ready to harvest. If the ear seems mature, check this by pulling a husk back to expose a kernel, and puncture the kernel with your thumbnail. A just-right kernel will ooze a milky juice. If so, pick the ear and run for the kitchen.

Pests of home-garden corn are usually only earworms and sometimes corn borers. Rolled-up leaves usually mean merely that the plant needs more watering. In addition to other garden sanitation, remove individual plants as they finish bearing.

Popcorn. Planting their own popcorn is a fine fun project for children, and a midget popcorn is fun plus. Of the popcorn varieties on the market, we consider four to be small enough for the midget garden. One of these, Strawberry, is listed by most seed houses. It grows to about 4 feet tall and bears such fetching little dark red ears, up to 2 inches long, looking a good deal like strawberries, that many of them are used for decorations instead of for popping. Like all popcorns, Strawberry is leisurely, taking 105 days to mature.

Fireside (Farmer), 85 to 90 days, grows about 3 feet tall, and most of its little ears are the color of Strawberry, but now and then one is pure yellow.

Tom Thumb (Olds'), 85 days, bears 3½-inch ears on dwarf plants, and is ready for popping soon after harvest; most popcorns must be stored for a month or longer in order to pop well.

White Cloud (Harris and Olds') is the only hybrid popcorn we include. It is a white, 95-day variety. The plants, though dwarf, may grow too tall in some localities to qualify as midgets, but we mention White Cloud here with that caution because its quality is particularly high.

Popcorn is grown the same way sweet corn is. When harvesting popcorn, though, allow it to dry on the stalk; sometimes birds want to move in on it, but you can outwit them by fastening paper bags loosely over the ears. Don't use plastic bags—they hold in moisture, and the ears won't dry. After harvesting the ears, remove the husks and pile the ears loosely in a cardboard carton to finish drying. To shell them, rub one ear against another. Shell each ear shortly before you plan to use it, and store the kernels in a closed jar in the refrigerator. Chilled kernels pop better.

CRESS

Cress, also called peppergrass, is a nice, piquant salad plant that fits pleasantly into a midget garden. Although it will grow tall if allowed to, no gardener in his right mind would allow it to, since its value lies in being mown like a little lawn

(with scissors) when it is only a few inches high. It then grows some more, and you mow it some more, until the stems become too woody. Then you pull it out and give it to the compost heap.

There are two varieties of cress usually offered, a curled-leaf kind and a plain-leaf kind. Both are good in salads, and the curled kind makes a garnish as pretty as curled parsley and more likely to be eaten.

Cress will grow in partial shade, and since it is a fast plant, producing some cuttable tops in three weeks (or sooner, if you want to rob the cradle), it should be given a seedbed enriched with compost and with ½ cup of bloodmeal worked into 5 feet of row. In fact, a 5-foot row is about as much as you should seed at one time, since succession plantings are much the better policy with cress. Give cress generous watering, and seed a new row every 2 or 3 weeks.

Cress does best for us in spring and fall. All-season planting is sometimes recommended, but we think cress is turned off by summer's longer days and perhaps also by the higher temperatures.

As with some herbs, cress can make a nice edge planting around a bed, and is particularly good for this if you want a temporary edging. You can take it out 6 to 8 weeks after seeding, and will still have gathered a good crop while it was in.

If cress needs any more recommendation to convince you to try it, here it is: It has no pests.

CUCUMBERS

A standard cucumber would grow all over a midget garden, but fortunately for cucumber fanciers with midget gardens, there are also midget cucumbers. In fact there are several, so you have a choice. Rather than strictly vining, which means growing a stem along the ground or up a support, some of these little plants are bushy. Those that are vining restrict the vine length to a mere 2 to 3 feet.

Mini (Burgess) is probably the most compact, and an abundant producer of 4-inch cucumbers. The crop starts maturing in 55 days. Tiny Dill (Farmer and Park) is also a

55-day cucumber, a New Hampshire product that bears 3-inch cucumbers on vines only 2 feet long. Baby (Field) bears 4-inch fruits and has a bushy plant habit. Midget (Shumway) also has 4-inch fruits, borne in this case on 2-foot vines. The earliest-bearing midget cucumbers are Mincu (Farmer and McFayden), 50 days, and Little Minnie (Gurney), 52 days. Both bear 4-inch fruits on 2- to 3-foot vines. Mincu is a Minnesota Experiment Station development. At present two hybrid cucumbers are being offered in the midget class. Cherokee (Park), 60 days, bears 7-inch cucumbers, large for a midget cucumber, though they can be picked when smaller, and its vines are about 3 feet long. Patio Pik (Farmer) is a dwarf-vined hybrid that, like Cherokee, grows slicing-size fruits if you don't pick them young. Being hybrids, these two cucumbers offer a bonus in some disease resistance and in vigorous growth and good crops if you give them some extra feeding and watering.

It is important to keep cucumbers picked as soon as they are ready, and unlike cantaloupes, young fruits are delicacies. If you let cucumbers stay on the vine past maturity they grow seedy and the vine's production slows. Except for this, you care for cucumbers exactly as you do cantaloupes, and they need the same growing conditions.

EGGPLANT

You must live where the summers are warm if you want to grow eggplants, but eggplant lovers say it's worth it. Eggplants are good looking, too, one of the ornamental vegetables both in plant and fruit. There are two midgets available, a purple one and a yellow one. The purple is Morden Midget (Farmer and Park), about 65 days, another development of the Canadian research station at Morden, Manitoba. Fruits are borne on bushy plants that grow to 2 feet tall or a little less. These are medium sized eggplants, of the typical eggplant shape, and quality is good. The other midget is Golden Yellow (Nichols), 75 days. The color is a novelty, as is the size of the fruits—about as large as lemons—and plants are compact.

Besides these two midgets, there are some small standard

eggplants that midget-gardeners could consider. Among them are Hybrid Slicer (Burgess), Early Beauty Hybrid (Burpee), and Imperial Black Beauty (Stokes). Hybrid Slicer, 68 days, though not listed as a midget, grows only 2 feet tall, and its glossy purple fruits are slender -2 inches wide and 9 inches long. Early Beauty Hybrid, 62 days, has typically eggplant-shaped fruits but they are smaller than other standards, and the plant grows to about 2 feet. Production is abundant. Imperial Black Beauty, 80 days, has standard-sized purple fruits on 18-inch bushes, each bush bearing up to six eggplants.

As we said in Chapter 1, eggplants are usually started indoors, at least 8 weeks before they go to the garden, for they need summer heat and lots of it. Let the weather get warm and really settled before you move the plants to the garden. If you must get them out of the house sooner, protect them in the garden with Hotkaps, or hold them in a coldframe while the weather is growing mild.

Eggplants want full sun, needless to say, and they live rich, so work compost generously into their planting area, along with ½ cup of cottonseed meal in the spot where each plant is to go. Space plants 2 feet apart, and allow 3 feet between rows.

A month to 6 weeks later, give the plants a boost by fertilizing each one with a quart of soluble compost, and mulch them with compost. Also at about this time give each plant another ½ cup of cottonseed meal. This should carry them through the rest of the season in brave style.

The days-to-maturity for each variety refer to when you can expect to pick your first ripe eggplant, counting from the day you set the plants out. The fruits ripen in succession, and ripeness is shown by their color and by their polished appearance. If in doubt, press your finger against the eggplant. If it is ripe, the dent made by your finger will remain. If you let eggplants hang too long, they develop seeds and begin to dry out, so it is much better to err on the other side and pick them before they are dead ripe. Young unripe eggplants are even preferred by some, so try a few; you may discover a brand-new taste adventure—and, once more, here is something we home gardeners have practically a patent on.

Corn borers and corn earworms sometimes go after eggplants, and some sucking insects may bother them, but diseases, mainly wilt, are more likely to be a problem if you have any problems. Sanitation is the best defense the gardener has, and as part of this it is important to plant eggplants in a different place in your garden each year—and also a place where you haven't grown peppers, as they are subject to the same troubles. This is called crop rotation, and we may as well add that in a midget garden, crop rotation may be meaningless if you can't get far enough away from where you planted the previous several seasons' eggplants or peppers. If you run into this problem, try growing these plants in containers instead of in the open ground. See the next chapter for details on containers and planting mixes for them.

ENDIVE

Here again is a plant that isn't available in midget varieties, but is one that can fit into a midget garden. Some other reasons for including it are that it is easy to grow, it will keep you in leafy greens long after the first fall frost, it is another of the double-use plants, as you can serve the heart in salads and cook the outer leaves, *and* endive is chockfull of vitamins.

There are two types of endive, a curled-leaf one and a broad-leaf one. The curled one is graceful and fringed, but may grow a little too big for some midget gardens, covering an 18-inch circle when fully developed. The broad-leaf one is only 15 inches across. It is called Batavian endive, and if you hear someone ask for escarole, it is Batavian endive that is meant; the other word came from the French, who apparently took it from the Romans, as the Latin *esca* means food. Endive has a mild flavor when mature, and a pleasantly bitter taste if eaten young.

Endive takes a good while to mature, 85 to 100 days, and since it prefers cool weather, plant early in spring if you want a summer crop. For the best endive, however, seed it in the garden in midsummer, for harvesting in the fall. This means seeding it no later than early June in northern sections.

Dig in compost when making the seed bed, and use 1/3 cup of blood meal to 5 feet of row. Plant seed ¼ inch deep in rows 12 inches apart. The plants should be thinned to stand 8 to 12 inches apart, and you can transplant the thinnings if you wish. No further fertilizing is needed if your soil is reasonably fertile, but don't stint the watering.

Endive is often blanched so that the heart turns creamy green. By planting at the distances we have given, you'll get some blanching automatically because the plants will be crowded, and this will keep some daylight from reaching the heart leaves. But if you want more blanching, tie the outer leaves loosely together over the top of the plant. You can hold them with a Twist-em, rubber band, or string. Blanching takes about 2 weeks. If water gets inside the plant during this period it may rot unless you untie it until it dries out.

Succulent though it is, endive has no pests.

GARLIC

If you like to use garlic in your cooking you might just as well be growing it. Garlic is a handsome plant, no trouble to raise, and this is the way to be sure of really fresh garlic cloves. Also, garlic growing in the garden is said to discourage some insects from lingering. If you are familiar with garlic you know that there is a white-skinned kind and a pinkish-skinned kind, and you may know that the pinkish one is a better keeper. There is also an enormous garlic; Nichols claims credit for introducing it and for naming it Elephant. It produces bulbs that may weigh as much as a pound. We have grown it, and it is a good garlic, though the ordinary size clove is about as much garlic as we need at one time.

We don't know of any midget garlic, but garlic will stay below 2 feet if you crowd it, and in any case it is not a great dominating plant that shades others, but a strap-leaved and slender plant that arches a graceful flower stalk upward into a swan's-neck curve and produces an extra crop of tiny bulblets up there, as well as the familiar bulb made up of cloves, which grows underground. You can plant the bulblets but it

takes two seasons to grow a good-sized underground bulb in this way, so we use the bulblets for flavoring, and plant segments of a garlic bulb, the cloves, to grow new bulbs. You can plant the ones you buy at the store for seasoning, if they are firm and good, or you can order some from a seed house.

Plant garlic in early spring, and prepare the soil by digging in compost. You probably won't be planting many cloves, so a mini-fertilizing guide is: work 1 tablespoon of blood meal into each 12 inches of row, and space cloves 2 inches apart. Plant them with the pointed tips up, the tips 2 inches below ground level.

Garlic takes at least 90 days to grow, and it can use a side-dressing of cottonseed meal 4 to 6 weeks after it has sprouted, 1 tablespoon per plant.

To tell when the garlic is nearly mature, dig down gently and look at the bulbs. This is a surer way than trying to guess whether three-quarters of the leaves have turned yellow. If the bulb looks well grown, bend all the leaves over, and two or three days later, pull the bulb up. Dry bulbs in the sun a few days, don't let them get wet, and store them in a cool, airy place where they won't freeze.

Garlic has no pests, as you might expect.

HERBS

Of the many herbs home gardeners delight in, we have selected six to suggest for your midget garden: basil, marjoram, parsley, summer savory, tarragon, and thyme. All six are splendid culinary herbs, and all can be kept to a size a midget garden can live with, or are compact by nature.

Not only will herbs grow in any garden soil, but they will not demand fertilizing and most are not troubled by pests. If we are growing a herb in a bed with some vegetables, then of course the herb gets fertilized along with the vegetables and thereby grows more lustily. But most herb authorities say that the herb growing in poor soil is a better-flavored herb. Anyway, you can see from this that it is easy to grow herbs.

In the spring prepare a fine seed bed, and work in ½ cup of wood ashes per foot of row. Plant the herb seed after the last

frost, except basil and tarragon. Basil should be seeded after the weather warms up, or indoors ahead of time and then transplanted, and tarragon should be grown from plants in order to get the best culinary tarragon. We list some herb plant suppliers in Chapter 9.

Practically all seed houses carry some herb seeds. Three that have a particularly good selection are Le Jardin, Nichols, and Park.

Basil. An annual herb, basil must be seeded each year. There are several kinds of basil but the ones to consider here are the sweet basil commonly offered in catalogs, and the smaller French basil (Nichols). The French one stays small, making bushy little 6- to 8-inch plants, very nice to edge beds or paths. The other, and larger, basil is a little better as a flavoring plant, we think. It grows to 2 feet but can be kept clipped to about half that for a midget garden. Basil enjoys full sun but will get along with partial shade. It is famous for use in Italian dishes, goes beautifully with tomato, and is an excellent herb for a herbed French salad dressing.

Marjoram. Also called sweet marjoram, this too is an annual herb if you live where winters are cold. It can grow to 2 feet but can be kept lower by pruning. And one point in pruning a herb is to get sprigs for seasoning, of course. Marjoram needs full sun to do best. It is an unusually useful culinary herb, good for flavoring stews and other meat dishes, and blending well with many vegetables, sauces, and dressings.

Parsley. Everybody knows parsley, though the curled parsley is what they usually know. It is the prettier, but the plain-leaf or Italian parsley is a little better for flavoring. Both are neat plants in the midget garden, growing to 10 inches high or less. They die in winter in cold climates, and live two years in mild ones, but are best reseeded each year, as they shoot up a seed stalk in their second year. Some gardeners let them do this as a way to seed a new crop without lifting a finger, but in a midget garden this isn't a good use of space. Parsley seed does take time to germinate,

but if you'll wet the row immediately before seeding, and then keep the soil moist for two weeks, you'll have no trouble with germination.

Parsley is widely used in cooking, and is supposed to enhance the flavor of other herbs when used with them. It is an essential ingredient of the French herb bouquet. Parsley, thyme, and marjoram, for example, are three herbs often joined in this way as a seasoning trio.

Summer savory. This nice little herb grows to 12 inches, but has a creeping habit. It is an annual, and it wants full sun if possible. Savory isn't as decorative a herb in the garden as some others, but it is delicate looking and worth the space for the sake of its flavoring. It goes nicely with egg dishes and in stuffings. It is often used with snap beans.

Tarragon. High on the list of the gourmets, tarragon is an annual in cold climates, and is a more temperamental herb than the others. It is rather creeping in habit, though it can grow to 2 feet tall. It will take partial shade, but usually does best for us in full sun and where it can get its roots against a wall or the side of a planter. Tarragon vinegar is well known as an ingredient of good salad dressing, and tarragon combines exceptionally well with fish dishes and omelets.

Thyme. Available in several varieties, thyme is a highly useful herb, popular in meat dishes and with many vegetables. It can overpower bland dishes, however. Thyme grows to 12 inches, but can be kept trimmed and shaped, like a tiny hedge. We like it especially well for bordering beds and paths. You can multiply a planting by lifting the clumps and pulling them apart in the spring, as you do chives. In very cold climates give thyme a straw mulch protection in winter, or pot the plants and begin them indoors.

If you'd like to try a herb tea, pour a pint of boiling water over a handful of fresh herb sprigs and let them steep for 15 to 30 minutes. Among the herbs we've just been talking about, marjoram and thyme are good for this purpose.

To make a herb vinegar, simply drop half a dozen whole

sprigs of the herb into a pint bottle and fill it with white vinegar. A wine vinegar is favored but isn't essential. You can also use half vinegar and half white wine. Give the herb two weeks to flavor the vinegar before you start using it. You needn't remove the herb afterward.

All six of the herbs here can be dried. In a humid climate this is better done in the oven—225° F. until the leaves are crisp; this takes from half an hour to several hours. Herbs can be dried in other climates by hanging them from the ceiling for several days. To gather herbs for drying, take them as they begin to flower, or before, and clip sprigs a few inches long. Rinse the sprigs and dry them in shallow pans, or on foil or cooky sheets, if in the oven. After the herbs are crisp-dry, separate leaves from stems by rolling the sprigs between your palms. Store the leaves in closed jars. Label them as you do so, and date them. Most dried herbs keep pretty well for a year, and in this group of six, marjoram and thyme are exceptionally good keepers.

KALE

There is a midget kale, Miniature Flowering (Nichols), that is so pretty, it is grown for its looks alone, its colors ranging through blues, greens, pinks, and reds. A 65-day variety, it is also as edible as any other kale, and is a good deal smaller, making it just about ideal for the midget garden, especially as an edging plant. But there are some dwarf varieties of standard kales, too, and since these may grow no taller than 12 inches, with an 18-inch spread, they also merit your consideration. Blue Curled Scotch, 55 days, Dwarf Green Curled, 60 days, and Vates, 55 days, are three.

Kale is a member of the cabbage group, and comes close to collards in nutrition, being stunningly rich in vitamins and minerals, and well supplied with protein, fats, and carbohydrates. Another good thing about kale is that it is there in the fall and winter, when many other crops are played out or frost-killed, and it is *fresh* vegetables that do you the most good.

The varieties we mentioned have leaves so curled they look like curled parsley, and are sometimes used in flower

arrangements for their color and texture.

Though you can plant kale early in the spring, say March in the Midwest, and get a crop by May, we think of kale as a fall and winter crop. It *tastes* like winter. Besides, frost actually improves kale, making it more tender and flavorful. For a fall crop, seed kale in July or August, and as with beets, keep the soil especially moist to help germination. You can transplant thinnings. Almost any garden soil will please kale. Dig in compost to help quicken growth, and work in 1 cup of cottonseed meal to 6 to 8 feet of row.

Though 12 inches is a usual spacing for kale plants in a row, they will accept crowding and can be planted 6 inches apart. Miniature Flowering kale can be planted 4 inches apart. When close-spacing like this, start harvesting early, taking every other plant so as to give the remaining ones room to expand. When harvesting the plants left in the row, you can take the outside leaves at first instead of the entire plant. This will make the crop last longer, since inside leaves will keep on growing. In severe winter climates, give kale a straw mulch.

Kale can have all of cabbage's troubles but it usually doesn't, and we seldom find anything bothering ours.

LETTUCE

There are two true midget lettuces on the market, and two others that we think qualify for the midget garden. The midget most widely listed is Tom Thumb (Burpee, Farmer, Field, Gurney, Park, and Shumway). Tom Thumb is a butterhead type, looking like a little Bibb (or a beautiful green rose, some think). It matures in 65 days, which is very speedy for a head lettuce. Tom Thumb has been one of the most popular midget vegetables, and is a delicate and luscious little thing with a creamy-yellow heart, a superb salad plant.

The other midget deserves to be far more widely listed by seed houses than it is. It goes under several names, and we happened on it for the first time in the catalog of an English house, Thompson & Morgan, where it was called Little Gem. At present the only U.S. seed house that we know carrying it is Farmer, who lists it as Sweet Midget Cos. It has the upright

growth of Cos, getting 5 to 6 inches tall, and the butter-crisp leaf quality of Bibb, making it a really happy little lettuce for a midget garden.

The two standard lettuces we would recommend considering for a midget garden are Deer Tongue (Burpee and Nichols), and Summer Bibb (Harris and Robson). Farmer lists one called Summerlong, which appears to be like Summer Bibb. Deer Tongue, 80 days, grows only an inch or so higher than Sweet Midget Cos, and though it spreads to about 8 inches, it is a neat plant of excellent quality. It also has the outstanding merit of taking a good deal more warm weather without bolting than heading lettuces usually do. When this is said about a head lettuce, remember that there is a limit to its tolerance, and no head lettuce is a heat *lover*.

Summer Bibb, from the New York Agricultural Experiment Station at Ithaca (Cornell University), is a Bibb type, compact and fast, 62 days, delicate and tender-hearted. Like Deer Tongue, it is noted for standing summer heat.

Give lettuce the benefit of a generous amount of compost worked into the soil. Compost supplies both nutrients and humus, lettuce demanding both, along with demanding moisture if it is to do well. Don't work wood ashes into the spot where lettuce is going, for despite the fact Bibb is often called Limestone lettuce, all lettuces prefer a mildly acid soil.

For the earliest crop, lettuce can be started indoors 6 weeks ahead of the last spring frost. Transplant it to the garden following the last frost, or even a few days before, after hardening-off for a week. The varieties covered here can be spaced 6 inches apart.

When harvesting your late lettuces, try this if you aren't going to plant something else in their place: cut them off at or a little above ground level, instead of pulling them up by the roots. This will make them throw up several sprouts from the stump you leave, and you'll get a free second crop.

Lettuce is not bothered much with diseases, but its succulence attracts some leaf eaters, and cutworms may bother young plants. On the whole, though, it is not a pest-plagued crop.

Now, what on earth are marigolds doing here among the vegetables? You can't eat them, can you? Well, we've never tried. But they are here because they are so often found in organic gardeners' gardens that we thought it might be helpful to include them. We always have some in our garden, partly for their cheerful faces and partly for whatever pest-discouraging they may be able to do.

In the past few decades a great deal of breeding has been done on marigolds, and just about every seed house handles at least a few varieties. Burpee is the leader in breeding work and in the extensiveness of its listing. For the purpose of the midget garden, the French marigold is the choice because it is smallest. We should note, though, that the breeders have also produced dwarf African marigolds that don't get much over 12 inches tall, and can make spectacular plants in a midget garden.

For the lowest-growing French marigolds, look for those in the class called Petite, an All-America selection that grows only 6 inches tall. They are offered in various tones ranging from yellow through orange to red, and also as bicolors.

Marigolds are such willing growers that they can be seeded directly in the garden after the soil has warmed up. If you want to start them indoors, do so about a month or six weeks before this time. This will give you earlier blooms in return for the extra trouble. We usually seed marigolds outdoors in a flat, and then transplant them. This is because they transplant very well, and the system leaves us free to spot them here and there about the garden as we please.

Plant seeds ¼ inch deep, and don't worry about enriching garden soil where the marigolds are to go. Not that marigolds will resent compost and fertilizer, but they don't demand it, and if they get much of it, they are likely to get twice as tall as they are supposed to. They do like well-drained soil, and will be happy with the most ordinary general garden care.

You'd think marigolds would have no pests at all, since they are often planted as anti-pests, and have such pungent

foliage it would seem no pest would touch it. However, young marigolds can be attacked by earwigs, slugs, and worms. This is another reason we start them off in flats; by the time we move them to the open garden they are big enough to take care of themselves.

MUSTARD

If you allow mustard to grow as tall as it pleases, it would not belong in a midget garden, for there are no midget mustards, and the standard mustard will grow to about 4 feet. The secret is to use it while it is still under 12 inches tall. We include it here because mustard greens, as the leaves are called, rank way up there in vitamin values, iron, and calcium; in addition, they are a fine hearty dish on the family dinner table. And mustard is a pretty plant in the garden, especially the curled-leaf kind.

Green Wave is an excellent curled mustard, an All-America winner, and carried by several seed houses. Southern Curled is an older variety, and Burpee's Fordhook Fancy is so curled and fringed, it is as good as an ornamental plant. Each of these mustards matures in about 40 days but can be cropped sonner, as we suggested, either a leaf at a time or the whole plant. A still faster variety is Tendergreen, sometimes listed as mustard spinach because it tastes more like spinach than mustard, and some catalogs list it with spinach. Its leaves are broad and smooth (easy to rinse), with white midribs, and you can start using them in three weeks. It will also take more heat and dry weather than other mustards.

You can make small plantings of mustard every three weeks if you want to keep it coming along from spring through fall. Seed it directly in the garden and give it the same care as lettuce. In midsummer use it while it is young, as it will bolt to seed if given a chance.

Mustard is related to the turnip, and can have the same pests, maggots and aphids being sometimes serious problems. Succession planting usually helps here, as both these pests are less troublesome at certain times.

OKRA

If you have warm summers you can grow okra, and if you think you don't like okra, try growing it and see. Too many people encounter okra only in soup, and some don't care for its mucilaginous quality there. If you are one of them, try the recipe we give in Chapter 8.

Another point about okra is its beautiful flowers, which look much like those of its relative, the hibiscus. There are tall okras, but the one to plant in a midget garden is Dwarf Green Long Pod, which tops off at about 2 feet.

Okra needs only moderately fertile soil. Work compost and 1 cup of cottonseed meal into 8 to 10 feet of row, then plant seeds ½ inch deep, but not until summer has arrived. Space plants 8 inches apart, and be sure to keep the pods picked once the plants start bearing, or they will stop doing so. This variety starts producing in about 50 days, and grows 8-inch pods, but pick them when they are 2 to 3 inches long for finest quality okra.

We list several possible pests of okra in Chapter 3 but we are merely trying to be thorough; it usually isn't bothered much.

ONIONS

For the midget garden the onion to consider is the green onion, also called spring onion. It grows fast and not too tall, and is very handy to have on hand when you need a mild onion flavor in a dish. You can grow green onions from seed, or from the little onions called sets. The sets are the surest way, giving nearly 100 percent sprouting. If you let them go on growing, they would develop into large globe onions in 3 to 4 months, the tops growing to perhaps 18 inches, but by harvesting them much sooner you can enjoy the bounty of garden-fresh green onions any time you want them. They will grow in partial shade if necessary. If you plant seed, look for "bunching onions" in seed catalogs.

Dig compost generously into the soil, and work in 1 cup of

cottonseed meal for each 6 feet of row. Make a fine seed bed and plant the seeds ½ inch deep. Be sure to keep them moist. They are slow sprouters, taking about 2 weeks.

Make the first seeding in early spring if you want fair-sized green onions by early summer. Full maturity, however, takes 4 months. Keep plants well watered. They can use a side-dressing of fertilizer after about 2 months at the same rate used when seeding, and mulching them with compost is highly recommended. Plants should stand 1 inch apart, and you can transplant the thinnings. For early-spring onions the next year, plant seeds in midsummer, and protect the planting during winter with a straw mulch.

If you plant sets instead of seeds, dig compost into the row and work in 1/3 cup of blood meal for 6 feet of row. Plant sets with the pointed tips 1 inch below the ground level, and place them 1 inch apart. You can start harvesting in about a month or sooner. Plan to use up these green onions from sets in about 2 months, as they will start forming bulbs by then. The best plan is to make a small planting every month.

Thrips may bother onions, and maggots can be a serious pest.

PEAS

If you think of peas as a plant covering a trellis, the new midget peas will amaze you. There are two varieties, and both have plants the size of the little French marigolds, only about 6 inches tall. There is a difference in pod size, though. Mighty Midget (Farmer and Park) bears pods 3½ inches long, while Tiny Tim (Farmer) bears pods only 2 inches long. Both mature in 60 days or so. Mighty Midget will give you more peas, and Tiny Tim, developed at the Morden, Manitoba research station, will give you a somewhat higher quality pea—though any freshly picked pea in its prime of life is going to be ambrosia, especially to someone who has never tasted any but the canned or frozen store-bought kind. Pick pods when they are nicely filled out, or sooner. They should be tender enough so that if you take one from a pod and mash it between your fingers, it will not split in half.

There is another kind of pea you ought to consider, the

edible-podded peas. They are sometimes called snow peas, sugar peas, and Chinese peas, and they're delicious, tasting not so much like another pea as like a different vegetable in their own right. For the midget garden, the best variety listed by most seed houses is Dwarf Gray Sugar. It is a climber, but usually tops off at 30 inches. Let it go up the garden fence, or provide a trellis. It is a 65-day pea, and you harvest pods *before* they are filled out, as soon as you can clearly see the outline of the peas on the sides of the pod. Dwarf Gray Sugar is green, not gray, sometimes with a touch of purple on the pods. Its flowers are a beautiful rich purple, looking like sweet peas, and it bears heavily. We have had plantings yield about 2 pounds per foot of row during a month or more of harvesting.

We have not grown it, but a variety called Sweetgreen (May) is said to stay at 15 inches, and is a 60-day sugar pea.

Peas prefer cool weather, so are a spring crop for most of the country, with fall plantings possible in the West and South. They are moderate feeders, needing compost worked into the row before seeding, along with 1 cup of cottonseed meal for 8 to 10 feet of row, and no side-dressing later. To plant seeds, make two one-inch-deep trenches alongside each other and about 3 inches apart. Pour water into them and when the soil is saturated, set the peas 1 inch apart in each row and cover them with soil. If you are planting sugar peas, you'll need a trellis, and it should be in place when you do the seeding. We usually plant one row on each side of the trellis.

Don't stint the watering with peas as they grow. They want plenty, and they deserve it.

Aphids sometimes swoop in on peas, but pests are not a major problem as a rule. Peas do get mildew, but this generally is toward the end of the bearing period and doesn't hurt the production much.

PEPPERS

Peppers are really lovely plants, with refined, attractive leaves and pretty fruits, so that they can serve as ornamentals

in the vegetable garden or as productive members in a flower border. The most truly midget pepper is Nosegay (Farmer), a development by the New Hampshire experiment station. It starts maturing its little red-and-yellow peppers, less than 1 inch wide when developed, in about 60 days, early enough so that you can plant seed in the garden instead of raising plants indoors ahead of time, if you wish. For insurance, we suggest you plant three seeds in each spot, and under Hotkaps, in that case, as soon as the weather has become fairly mild. Thin to one plant per spot when all are 3 to 4 inches high.

Another early pepper is Pinocchio (Farmer). Its bright red finger-shaped fruits resemble some hot peppers, but Pinocchio is sweet, very pretty, and small enough to grow in a pot. Its peppers point upward instead of hanging down.

Italian Sweet (Burgess), a 60-day pepper, is a dwarf upright plant that bears 5-inch-long, narrow peppers in profusion. The flavor is notably mild and sweet.

Tokyo Bell (May) is an extra-early hybrid pepper, 57 days, developed in Japan. It is fairly midget in plant size, 15 inches, and bears standard-sized peppers. The peppers vary a good deal in shape, even on the same plant, but this is not a serious drawback, and the plants will take hot weather well.

Vinette (Stokes), 65 days, is a 14-inch plant that bears lots of meaty, blocky peppers. Vinedale (Harris, McFayden, and Stokes) is a 60-day dwarf pepper developed in Canada at the Vineland, Ontario, Horticultural Station, and is an All-America winner. Its fruits are 4 inches long and 2 inches wide at the shoulder. Both Vinette and Vinedale peppers have been dependable producers in northern climates, and are recommended for trial if you have short summers.

The more widely listed Sweet Cherry (Burgess, Field, McFayden, and Olds') bears small, cherry-shaped peppers, 1½ inches wide, that turn from deep green to dark red and are popular for pickling and for salads. The plants are a little tall for some spots in a midget garden, we think, growing to 18 to 20 inches, but they bear heavy crops of their midget fruits in about 70 days to the first picking, and are very pretty.

Peppers take the same general care as eggplants, except that they need only average fertilizing. Work compost and ½ cup of cottonseed meal into each spot where a plant is going,

and no additional fertilizing should be necessary. Peppers also need the same weather eggplants like—hot. They'll make good plant growth in a cool-summer climate but don't expect to gather many peppers. To start plants ahead of time indoors, follow the suggestions for eggplants. In the garden, you can space Nosegay and Pinocchio 12 inches apart, the others 18 to 24 inches.

Like eggplants, peppers ripen their fruits in succession, giving you a nice long harvest. And you can harvest them at any stage of growth. Most peppers change from green to red when fully mature.

Keep garden trash cleaned up to help avoid disease problems with peppers, as with eggplants. Peppers have most of eggplants' potential enemies and a few of their own, but are not often much bothered in home gardens. Don't handle tobacco before going into the garden or you may infect peppers with mosaic.

PUMPKINS

There are three midget pumpkins, more than you might expect of this vegetable, but its popularity with children has something to do with that, especially in midget gardens. All three plants are bush types, and need 100 summer days to mature fruits. In this case the appeal of the midget is not speed but the compactness of the plants.

The newest midget pumpkin is Cinderella (Gurney, Harris, and Stokes). Developed by Harris and the University of Illinois, Cinderella produces smooth, 10-inch-wide, bright orange pumpkins weighing 7 pounds, and needs a mere 6 square feet per plant, a spot 2 feet by 3 feet. Plants produce one or two pumpkins each.

Cheyenne (Farmer), developed at the Wyoming U.S. Department of Agriculture station, bears fruits even smaller, only 6 inches wide. They are bright orange and have solid flesh of fine texture and deep yellow color.

Tricky Jack (Farmer) is larger than Cheyenne and is a good pie pumpkin. It offers the extra of having seeds without hulls, so that you can dry them in the oven and eat them whole.

If you can't promise these little pumpkins 14 weeks of warm weather, say from late May to the end of August, you'll have to seed them indoors for a head start. To make transplanting easier, seed them in peat pots or in one of the new peat-mixture blocks such as Fertl-Cubes or Jiffy-7 Pellets. Do this about 2 weeks before the average date of your last spring frost. Two weeks *after* the frost date, move the plants to the garden and protect them with Hotkaps or a plastic tent for 2 weeks more, as described in Chapter 1. However, seeding directly in the garden under similar protection will usually provide a sufficient head start in any but the most short-summer climates. Incidentally, although pumpkins insist on warm weather, they don't do well in the South.

You plant and care for pumpkins as you do cantaloupes, but pumpkins will grow in partial shade if need be. Some of the enemies of squash, such as vine borers and cucumber beetles, may bother pumpkins, but home garden plantings are often happily free of any troubles.

Harvest your pumpkins before the first hard frost. A light frost won't hurt the fruits, though it will kill the plants. To harvest, pull each pumpkin until its stem parts from the vine, leaving a stub of stem attached to the pumpkin. Give them a week outside, which is an after-ripening process, helped by the sunshine, but bring them indoors at night if the nights are frosty. Handle pumpkins gently, especially if you expect to store them for a while. Ideal storage for them is a dry place (60 to 70 percent humidity) with a temperature range of 40° to 65° F. Light won't hurt them. So stored, they will keep for 6 months, and you can make a pumpkin pie for Easter.

RADISHES

Standard radishes fit nicely into a midget garden. They grow only a few inches tall, grow fast, and don't take much care.

For the smallest leafy growth try Cherry Belle and French Breakfast. Both mature in 23 days. Cherry Belle is a round

red radish less than 1 inch wide, and French Breakfast is olive-shaped, almost 2 inches long, red with a white tip. Burpee White is also short-topped. It is the same size and shape as Cherry Belle and is one of the best whites. It takes 25 days to mature. Champion, 28 days and an All-America selection, is a round red radish with a good name for standing up in summer heat; most radishes are discouraged by heat, but Champion can be planted all summer. Another radish with heat tolerance is All Seasons (Burpee). It takes 45 days to become prime pulling size, 6 inches long and 1 inch wide, but then instead of going pithy a week or two later as most radishes will, All Seasons goes quietly on growing and holding its crispness and mild pungency for about *six* weeks. By then it will have grown about 12 inches long and 2½ inches wide—so don't seed this one in a window box if you aren't going to be there to harvest it in time.

Nearly any garden soil suits radishes, and they don't need full sun. Make a finely worked seed bed, digging in 2 inches of screened compost, as early in spring as the soil can be worked. Plant seed no more than ½ inch deep or radishes will not be shaped well. Space seeds 1 inch apart and you won't have to thin the plants. Rows can be 12 inches apart. Keep the planting well watered to keep it growing fast, and make new plantings each week until warm weather, and again starting in early fall. As noted, Champion and All Seasons can also be planted through the summer. You can cook radish tops as greens, if you like.

If it weren't for maggots, radishes would be another of those gorgeous pest-free crops. The maggot is the same one that eats roots of cabbages.

SHALLOTS

With the boom in gourmet cooking, shallots (also called eschalots) suddenly became a familiar word. Not so familiar in the flesh, though, as they are hard to find in markets, and you may hunt long and vainly for some to plant. What you plant are bulbs. Some are imported, and most of those grown commercially in this country are grown in southern

Louisiana. No southern mail order seed house that we know of handles them, but we can refer you to four other suppliers, two on the west coast and two on the east coast: Cedarbrook, Nichols, Le Jardin, and Hemlock Hill; full addresses are in Chapter 9.

Why grow shallots at all in your midget garden? Because they deserve the praise they get, not only as a kind of delicate onion but also because they add something uniquely good to the dishes and sauces they go into, and because they fit so comfortably into the midget garden space. They grow to about the height of green onions or a little less, and look like them, too. If you pulled them green, you couldn't tell the difference. By letting them reach maturity, however, you get from one bulb (about the size of a garlic clove) a cluster of two dozen or more that will keep for months so that you can use them as you need them, exactly as you can keep garlic.

Plant shallots in the spring, pointed ends up, the pointed tips 1 inch below ground level. Space bulbs 8 inches apart. Care for them as you do garlic except for watering; shallots take less water than other vegetables and can be put in a fairly dry spot in the garden. They take every bit as long as garlic to mature, 3 months or more, and are then harvested, cured, and stored the same way.

With a little bit of luck your shallots may have no pests whatever, but if they do, the pests will probably be maggots.

SPINACH

Though no midget variety of spinach is on the market, many standard spinaches fit the midget garden, growing 10 to 12 inches tall and spreading 12 inches or so. And plants can be harvested at smaller stages of growth if you wish. Spinach is a spring and fall plant, as it will bolt to seed in hot weather, but it is a good plant for wintering over, to have very early greens the following spring. For this purpose, Bloomsdale is one of the best varieties when seeded in early fall. It makes a good growth before winter comes, and you then protect it with a 6-inch straw or leaf mulch, raking this

off in early spring. Many seed houses list this variety, and Harris carries a Winter Bloomsdale, that takes both heat and cold. The Bloomsdales have heavily crumpled leaves, called "savoyed." America is an All-America selection, and slower to bolt than many other spinaches, making it good for spring planting, which is done as soon as the soil can be worked. A hybrid spinach developed by the U.S. Department of Agriculture and cooperating state experiment stations is Hybrid No. 7. It is resistant to some spinach diseases and is vigorous; it is a good wintering-over spinach. It may grow too tall for some midget gardens, however, unless located to the north of low-growing vegetables. It is a fast grower, 40 days, about a week ahead of average spinach timing.

Plant and care for spinach as you do lettuce or mustard. Harvest it a whole plant at a time, taking every other plant in the row at first, to give the remaining ones more space to grow. Another way is to cut the large leaves instead of the whole plants, which will make them grow a second crop.

Cutworms may bother young spinach, and slugs and aphids are sometimes troublesome. Resistant varieties are the best answer to diseases.

SQUASH

Winter squash. Winter squash is a good old vegetable, very good for you, a pie vegetable as well as a dinner-table one, but until recently a winter squash plant was out of the question for a small garden. It would have taken the place. Then along came the midgets, and the whole picture changed. The first arrivals were Gold Nugget and Kindred, and both took All-America awards. Gold Nugget, 85 days, is carried by nearly every seed house. The fruits look like little pumpkins and weigh about 2 pounds. The bush-type plant grows about 30 inches tall and bears between 5 and 8 fruits. Their yellow flesh is of good quality, particularly when baked in the shell. Kindred, sometimes called Orange Buttercup, is also listed by several seed houses. It matures at about the time Gold Nugget does, and is also a bush plant. Fruits are a little larger than Gold Nugget, running 3 pounds or a little more, and are of very good quality.

Eat-All (Farmer) is a New Hampshire development that, like Tricky Jack pumpkin, has hull-less seeds that can be oven-dried and eaten. Looking like very small watermelons, these squashes grow on five-foot vines, compact enough for a midget garden.

Bush Ebony (Harris) is an acorn type developed at Cornell University by Dr. Henry Munger. A compact vining or semi-bush type, its vines grow to between 4 and 6 feet long, and bear good crops of standard sized fruits, about 5 inches long.

To plant and care for squash, follow the directions for cantaloupes. Give winter squash time to fully mature, then harvest them like pumpkins, leaving a stub of stem attached, and being careful not to bruise the shells. Sun-dry them for a week, then store them under the same conditions as pumpkins.

Cucumber beetles, squash bugs, and squash borers may attack squash, and some diseases occasionally cause trouble. See Chapter 3 for handling these.

Summer Squash. There are at this time no true midget summer squashes, but a number of bush types have been introduced over the past several years. These plants are compact, about 3 feet tall and forming a central clump of growth that then extends a stocky vine outward, on which the squashes form in succession as the vine grows. Though such a vine is capable of growing about 5 feet long on varieties we have tested, you can persuade it to curve, rather than keep on growing straight out, by gently nudging it every few days and then keeping it in place with a short stake pushed into the ground. Handled in this way, a hill of three or four plants can be grown on a piece of soil measuring 5 feet by 5 feet or a little less. If you have this room in your midget garden, say at the north end where the planting can get plenty of sun but won't shade lower-growing crops, you can raise a great many delicious squashes there. Each plant in the hill should give you from a dozen to three dozen fruits.

Even if you don't have the garden space to spare, you can grow a hill of these summer bush-type squashes in a big container. A half-barrel is a good size. We are growing a bush

zucchini in a 12-gallon fiber planter at this moment. Twelve gallons amounts to 1½ bushels. We have three plants growing in the planter, the maximum number for this size container. A bushel-size planter can take two plants, and a 5-gallon can will accommodate one plant. We go into this fully in the next chapter, but we wanted to mention it now for the sake of the summer squash.

Among the varieties available for either the 5-foot by 5-foot garden spot or a big container are these: St. Pat scallop (Burpee, Farmer, Field, and Robson) is a 50-day hybrid and an All-America winner, producing the familiar round patty-pan fruits but with a decidedly greenish color instead of the usual white. Burpee Hybrid zucchini, 50 days, is outstandingly good, as is Harris's Hybrid cocozelle, also 50 days and also a heavy producer. Zucchini and cocozelle squashes look a good deal alike, cocozelle being more productive, we find, during midwestern summers. Among the yellow summer squashes you have a wide choice of straightnecks or crooknecks. We usually grow crooknecks but both are good, and you can get them at any seed house. Make sure that the catalog description specifies "bush," though.

Summer squash is grown the same way cantaloupes and winter squashes are, but you harvest summer squash by keeping them picked as soon as they reach the size you want, instead of waiting on ripeness or end-of-the-season maturity. The new little St. Pat scallop can be picked when it is only 1½ inches across, and other summer squashes can also be picked young, when 4 to 6 inches long. If allowed to go on growing, some of them will get to be nearly as big as watermelons. These great big ones are not quite as buttery-fleshed as little ones, but the chief reason for keeping summer squash picked as it grows is to keep the plant producing. Its ambition in life is to produce seeds, and if you keep its fruits picked, it keeps on doggedly making new ones, hoping it will finally get to keep one long enough to form seeds.

Summer squash is subject to the same problems winter squash is.

Strawberries in a vegetable garden? Why not? And the strawberry we're suggesting here for the midget garden is a cute little fellow that you get by planting a *seed*. So if you've always thought you had to order plants to get strawberries, Alpine strawberries will come as a pleasant surprise. We suggest you plant Alpine strawberries as a border—around beds or around your entire midget garden. The plants are nice little things that will stay under 8 inches in most climates, and can be planted about 8 inches apart. The leaves are lighter green than those of the other strawberries, and the little white-petaled, yellow-centered flowers and midget berries are held well up, as if on display.

The Alpine variety we grow is Baron Solemacher, and it comes in two colors of fruit, red and yellow. The yellow one is carried by Park and Gurney, the red one by Breck's, Burgess, Burpee, Gurney, McFayden, Nichols, and Shumway.

Alpines will grow in partial shade, and unlike most strawberries they do not send out runners (or almost never do) to form new plants—an advantage when you want a border planting.

Some gardeners compare the taste of the berries to wild strawberries. We find them agreeably flavored, rather soft, an interesting little garden dividend.

If you seed Alpines indoors and set them out when pepper plants go out, you'll get fruit that summer; and you may get it that soon by planting seed in the garden after the last frost. Plant the seed ½ inch deep or a little less, and keep it moist.

Alpine strawberries are perennials, though often grown in a small garden as annuals in order to keep them small, since they build larger centers by crown division in time. To keep them as perennials, fertilize them in late summer with 1 teaspoon of blood meal per plant; then in the fall before the first hard freeze, cut the top growth to within 2 inches of ground level, and mulch the plants with straw for the winter. We have known Alpines to grow their own replacements from the seeds in the ripe berries they may drop, which is a

no-work way to keep a planting going. You can easily move the new little plants to wherever you want them.

Strawberries are subject to several diseases, but Alpines, in our experience, are not.

TOMATOES

You have a fine wide choice of tomatoes for your midget garden, for here the plant breeders have gone all-out. And no wonder, for the tomato is America's most popular home garden vegetable. Some of these midgets are tiny plants, some are more like dwarf standards, and among them you can find at least one with the combination of traits you want.

The varieties carried by most seed houses are Small Fry and Tiny Tim. Small Fry, an All-America winner, is a 52-day hybrid that produces lots of mild and well-flavored 1-inch-wide fruits on plants that may grow a little over 3 feet tall (lower in more northern states). This is tall for a midget garden, so keep this in mind when deciding where to locate Small Fry plants, and space them 2 feet apart. This extremely productive variety is happily resistant to wilts and nematodes.

Tiny Tim is a much smaller plant, a mini-midget that grows 8 to 15 inches tall, and bears little tomatoes, ¾ inch wide. It is highly productive, and may bear over 200 tomatoes per plant. Space these plants 12 inches apart. There is also a yellow-fruited Tiny Tim (Burgess).

Patio Hybrid (Olds', Park, and Stokes) grows lower than Small Fry, 24 to 30 inches, and does well in a container. Support it with a stake. The tomatoes are bright red, sweet, and 2 to 3 inches wide. In the open garden, space these plants 2 feet apart. Pretty Patio (May) appears to be the same as Patio Hybrid. Somewhat similar in plant habit and fruit size are Fireball (Harris and Robson), Springset (Harris and Stokes), and Rocket (Stokes). Springset will form fruits in cool weather, unusual for tomatoes.

A new hybrid, Burpee's Pixie, stays under 18 inches in height and bears big crops of meaty red fruits a little less than 2 inches wide, and has a very good flavor. It is also early, 52 days.

A new midget, introduced in 1973, is Presto (Harris), which grows 2 to 3 feet tall and has fruits 2 inches wide. It is a very early bearer, ripening its first fruits July 1 in the developer's trial grounds near Rochester, N.Y.

Window Box (McFayden) is also a fast tomato, so that plants grown from seed sown in the garden come into bearing at almost the same time some indoor-seeded plants do. Window Box plants are dwarf, and fruits are medium-small.

The only pink midget tomato available is Dwarf Champion (Stokes), bearing medium-sized fruits on sturdy plants.

There have always been tomato plants that bore small-sized fruits, called cherry, pear, and plum tomatoes to describe their shapes, but the plants are standard size. Today you can get these little fruits, and in both yellow and red colors, on medium-small plants. They are called mini tomatoes by Burgess, the seed house that offers them.

You plant and care for tomatoes the same as for eggplants and peppers. Tomatoes need the same fertilizing as peppers, and will grow more leaves instead of more fruit if given too much nitrogen. When transplanting tomatoes, set them deeply, up to the lowest leaves, and they'll form extra feeding roots along the buried stems.

Especially when planted in containers, midget tomatoes may need some pruning to keep them from growing too much plant. Do this by pinching out the growing tips of the shoots that spring up in the crotches where branches join the stem. These shoots are called suckers.

Once a tomato plant starts producing, it keeps it up all season, and will still have lots of unripe fruits hanging on it when frost comes. You can ripen the nearer-mature such fruits by bringing them indoors and spreading them in a single layer. A dark place at 65° F. is best, but isn't essential.

A number of insects admire tomatoes as much as people do, but it is a rare home planting that suffers seriously. Diseases are controlled best by choosing resistant varieties. See Chapter 3 for details if you run into trouble.

TURNIPS

There is exactly one midget turnip available at this writing, a cute little inch-wide fellow called Presto (Breck's, Field, Nichols, and Shumway). It is a fast grower, maturing in just about a month, and is tender and well flavored.

Except for the varieties of turnips grown as much for tops as for roots (turnip greens being very nutritious), any turnip will fit comfortably in a midget garden, so you are not confined to the one midget on the market. A standard turnip nearly as fast as Presto is a new hybrid, Tokyo Cross, an All-America winner that grows 2-inch turnips in 35 days and is resistant to some turnip diseases.

Turnips are a cool-weather crop, so are planted early in the spring for a first crop, and then in mid-summer for a fall crop; the fall crop is often better flavored. Though July is the usual planting month for this late crop, both Presto and Tokyo Cross can succeed if planted a month later.

You grow turnips the same way you grow beets. Turnips have more potential problems, many of them the same that attack their cousins, cabbages. Aphids, cabbage worms, and maggots are among these. The later planting is apt to be less bothered than the spring planting.

WATERMELONS

Certainly one of the most welcome midget vegetables to come from the breeding farms is the new little watermelon. If you have always wished there was a watermelon that you could enjoy without crowding the refrigerator, the midgets are the answer to your prayers. Most are no bigger than cantaloupes, and they are sweet and crisp, fast-growing, and produce well.

New Hampshire Midget (Burgess, Burpee, Farmer, Field, May, McFayden, and Olds') is a 70-day melon with a very thin green rind and strawberry-red flesh. It carried off an All-America gold medal, and has been a highly popular little watermelon despite having fairly coarse-textured flesh. Fruits run from 4 to 6 pounds.

Another easily-found midget watermelon is Golden Midget (Breck's, Farmer, Gurney, May, Park, and Shumway). It is even earlier than New Hampshire Midget, maturing in 65 days, and has a high sugar content. Golden Midget's most unique appeal, however, is its color key to ripeness—when ripe, its rind turns from green to yellow.

A larger midget, both in size of fruits and plant, is Ice Box Midget (Shumway), which bears 10-pound melons. Little Midget (Park) is also a 10-pound melon, maturing its nearly round fruits in 75 days. Yellow Lollipop (Park), 65 to 70 days and smallest of all the midgets, is a 3-pound hybrid with a thin green rind and yellow flesh. Both Little Midget and Yellow Lollipop should be spaced 4 to 6 feet between hills.

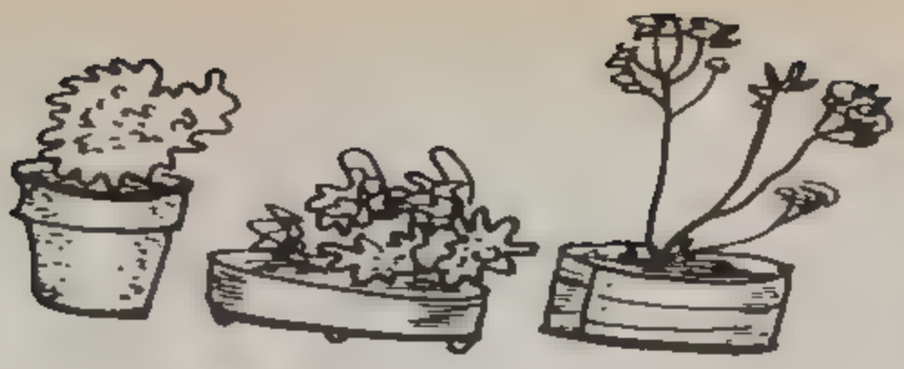
Watermelons prefer a more acid soil than other vegetables. As mentioned in Chapter 1, digging sawdust or sphagnum peat into the soil will make it more acid. For a rule of thumb here, spread 1/3 bucket of sawdust or sphagnum peat on the spot where you are going to plant a hill of midget watermelons, and dig it in, along with up to a bushel of compost. Thereafter, give watermelons the same handling you give cantaloupes.

Cucumber beetles and squash bugs are sometimes pesky, as are some fungus problems.

Someone asked us once how to tell when a watermelon was *over*-ripe. We had to admit the question had never come up. Every home gardener we know is concerned solely with the *under*-ripe melon, wondering how soon it will be ready to eat. The classic test is the thump. Make a fist and rap the side of the melon with your knuckles. If it goes "plink" it is green, and if it goes "plunk" it is ripe. The green signal is a metallic, light sound, and the ripe signal a dull, deeper sound. One warning: Do this testing early in the morning. You don't have to harvest the melon at that moment if you'd rather not, but if you try the thump test after the day has warmed up, there will be hardly any difference between the sound a green melon makes and the one a ripe one does; both will go "plunk." So will a green melon that was picked a day or more before you thump it. Some surer signs of ripeness are: A yellow area where the melon rested on the ground; a slight roughness of the rind; dried-up tendrils at the leaf nearest the melon.

Chapter 5

Midget, Patio, Porch and Indoor Vegetable Gardens



Supposing you have no back yard or any other open ground where you could grow a midget garden? Maybe you only have a porch, a paved area like a patio, or merely an inside window sill. Can you still hope to grow your own midget vegetables?

Yes you can, within reason. By doing a little picking and choosing among the possible vegetables, you can see which ones will flourish under the conditions you can give them. It's something like getting married; you may not be able to offer a vegetable a living in the manner to which it is accustomed, but this doesn't necessarily mean it won't be happy with you. Mainly, it must be willing to grow well without demanding constant attention, in a container instead of in the unconfining open ground. Given that, you can take care of its other needs, and can expect in return some fun and good food, and a marvelous partnership with Mother Nature.

Special needs of container-grown vegetables. Keep these points in mind when deciding if you want to grow plants in containers: They will need more watering than open-garden plants; they will need more feeding; and they need protection from extremes of weather. We will go into detail a little further along.

Special advantages of container-growing. To offset the sometimes bothersome requirements of container plants, you

might regard these good points: You can move the contained plants, group them, put them where they will give you more pleasure to see, and where their foliage and color can form part of the house decoration. You can quickly learn a good deal more about a plant in a container than one in the garden simply because it is conveniently nearby for your observation. Indoors, you can grow some vegetables at times of the year when it is impossible to grow them outdoors. And, you can tend a container plant at convenient odd moments and without changing clothes or taking more than a few steps.

PORCH AND PATIO GARDENING

In cool-summer climates such as parts of the west coast and some mountainous areas, a planter set in a sunny nook of a patio or against the south side of a wall is the only place home gardeners can produce fruits of eggplants, peppers, cucumbers, and a few such other heat-loving crops. Consequently they have some of the most handily located kitchen gardens, and are an inspiration to all beholders. Such container gardens also have the advantages of little weed trouble, no need of paths for their subsequent maintenance, faster maturity of some vegetables than in open ground, no trouble with such varmints as moles, and the privilege of vertical extensions of the garden by the use of walls. Some other places where you can garden without touching the earth are porches, window boxes, roofs, the edges of driveways, stairs, sidewalks, and banisters.

The statement is often made that any of these little gardens is subject to the same pests that may attack the open-ground garden. Well, the odds against some of those potential pests attacking such a garden are so great you can forget about them. Other pest problems may occur, as with any gardening, but the sum total should be moderate and may even be zero.

There are other open-garden problems you will not have. One is the question of soil. The open-garden gardener must work with the soil he finds there, but when you garden in containers, you make the soil mixture you want. Another

open-garden problem that container-gardening sidesteps is that of having to battle roots of nearby trees and shrubbery for water and fertilizer; the container protects your vegetables from these pirates.

Along with the open-garden gardener you must, of course, make sure your site gets 6 hours or so of sun a day, is not so hemmed in by buildings and walls that no breeze ever enters, and is conveniently near a source of water.

Remember: A container full of earth and plants is *heavy*. A planting mixture will average 10 pounds to the gallon. Four planter boxes on a roof can cave it in if the roof isn't built to take 1000 pounds of concentrated weight.

Air, heat, and light. Even though no two container-gardens are identical twins, all of them have one thing in common: the nearness to buildings. This nearness affects plants in three ways: air movement, heat and light.

If air movement is too hampered by a building or a wall, vegetables may suffer. Fungus diseases are especially likely to result from poor air circulation. The usual remedy is simple: Move the containers into a more open spot. In windy areas, however, the nearness of a building or wall can be a blessing, serving as a windbreak. Air polluted with smoke or fumes is a separate problem. In general, vegetables do poorly under these conditions. So do people—so get the pollution stopped, or get yourself and your vegetable garden out of there.

As to heat, a building absorbs warmth from sunshine and then radiates that warmth. In the immediate vicinity of the side of a house, its roof, or a patio wall, this produces a micro-climate that is warmer than the surrounding climate. This difference can amount to 20 degrees F. For heat-loving plants such as crookneck squash and eggplant, this warm zone may be the deciding factor as to whether they will bear fruit or not in a cool climate.

If you live in a warm climate, though, such a warm zone may be too warm in midsummer for any vegetables to do well, and in container-gardening this is complicated by excessive loss of water. One remedy is to move the containers so as to allow space between them and the building or wall. Where this isn't practical, as it sometimes isn't when gardening on a roof, an alternative is to provide some kind of

filtered shade, like that of a lath house with its roof of wood strips spaced an inch or two apart. In any case it is a good idea to set the containers on blocks or on wheeled platforms, so air can move underneath them.

Like heat, light is also transmitted by buildings to plants growing nearby. The intensity of this light depends, in addition to how bright it is to begin with, mainly on the color of the building surface reflecting it: a dark color reflects hardly any, and a white or slivery surface reflects the most.

Many vegetables want all the daylight they can get, with the fruiting vegetables (tomatoes, peppers, etc.) wanting the most. A plant must have light in order to make starch and sugar with its leaves; this is the process called photosynthesis, the "photo" part of the word meaning light. Certain other vegetables, however, demand a short day-length. Of the vegetables you may be growing, these four would be the ones most discouraged by too long-continued reflected light or direct light: Chinese cabbage, lettuce, radishes, and spinach. Root crops other than radishes are somewhat affected, as are cress, endive, and mustard. Each of these vegetables is programmed by nature to start going to seed when days become summer-long. Therefore, if you are growing them as early crops to mature in the summer rather than the fall, locate their containers where they will get less reflected light than the other vegetables. In the case of lettuce, which many gardeners like to keep coming along for salads throughout the summer, a location that is shady after about 2 o'clock in the afternoon is good summertime practice in warm climates, and a leaf lettuce (Simpson and Grand Rapids are two good ones) is a better bet here than most head lettuces.

CONTAINERS

Clay pots, wooden planters (boxes), and tubs, are old-time containers for growing plants and are still some of the best. Besides wood and clay, other materials used for them include metal, plastic, anf fiber. And built-in containers can be constructed of brick, stone, cinder block, concrete,

metal, and tile, as well as of wood or clay. Since gardeners have always used whatever materials they could get, feel free to do the same. Here are some pointers on the various kinds of containers.

Standard clay pots, red and unglazed, have an honest and forthright look that appeals to gardeners and to plants. Another thing—these pots come in a good range of sizes, and the sizes are fixed, so you know how much soil each one holds. The sizes always refer to the *inside width* at the very top of the pot. With a few exceptions, the pots are also the height of their inside width at the top. The sizes increase in an orderly manner by an inch or two inches at a time, but the amounts the pots hold may seem as variable as a cow path. Sizes of pots and the amount each one holds goes like this:

3″	½ pint
4″	1¼ pints
5″	2¼ pints
6″	5 pints
7″	6 pints
8″	1 gallon
9″	1½ gallons
10″	2¼ gallons
12″	3½ gallons
14″	6 gallons

For most midget-vegetable growing you could get along with three of these sizes—6-inch, 8-inch, and 10-inch pots. With some vegetables, a pot wouldn't give you enough of a crop to count (beans, for instance), and so they belong in a planter. Some other vegetables make so much plant growth (squash is one) that a tub is the best container for the amount of earth and water they need. In just a minute we'll give you a rundown of the vegetables we've covered in the previous chapter, noting which types of containers are best for each.

Clay pots are quite breakable, of course, and the large ones are pretty heavy. These two points are the reasons clay pots are not made in sizes larger than they are. Clay pots can become unsightly and soiled, but they aren't hard to clean. We generally scour them with a handful of sand or earth, and

then rinse them well. Another way is to scrub them with hot water to which you have added detergent and household bleach. Then rinse and dry them.

Other pots, some, close imitations of clay ones, are made of plastics, styrofoam, fiber, and other materials.

The plastic pots hold moisture well, and some are attractive. Those we have used are easily cracked. They add very little weight to a planting—which makes them easy to shift about, but may be a drawback where wind may topple a plant that lacks some bottom weight.

Styrofoam pots are also extremely light in weight, and hold moisture well. They are fairly close to the cost of clay pots, and superficially resemble them.

The fiber pots we have used are lightweight, look something like papier-mâché, and have plastic's advantages without its brittleness. We find they last us for several seasons, though one season is the usual expectation.

In comparing clay pots to these various other kinds, we should add that for many gardeners one of the appeals of clay is its ability to absorb water. You can thoroughly water a plant in a clay pot by setting the pot in a pan of water; the nearer the top of the clay pot the water comes to, the faster the pot will drink in the water.

Planters are most often made of wood, and you can make your own. Make it 12 inches deep, and any vegetable that belongs in a planter will grow in it. Put the planter together with galvanized nails or brass screws. A convenient width is 12 inches, and we have found that a length of about 4 feet will accommodate a good number of vegetables and isn't so big that the planter is hard to shift around. Bore two rows of ½-inch holes, 5 inches apart, in the bottom of the planter to provide drainage. Finish by fastening two strips of wood on the bottom, one at each end, for the planter to rest on. This is to help with drainage and with air circulation.

A planter such as this doesn't absolutely have to be treated with a wood preservative, though this is often done. Our own preference is to omit this step, and in that case, redwood, cedar, or cypress are good choices for the wood because they don't rot quickly. However, any wood will hold up for a few years. If you want more than this, and aren't using redwood,

cedar, or cypress, do this: See that the planter is completely dry, then paint it inside and out with any one of these products: asphalt compound; a fast-drying outside house paint; or Cuprinol, a coating strongly favored by many container-gardening enthusiasts. Whatever you do, though, *don't* use creosote as a wood preservative on your planter; it will kill your plants. Cement is just about as bad; you aren't likely to use cement, we know, but once in a while a gardener plants something in a container that was used to mix cement or to mold concrete forms, and the plants are doomed.

Before you fill your planter with soil, you must put something over the drain holes in the bottom so the soil won't run through. You can cover each hole with a piece of broken clay pot or with a piece of charcoal, which is also common practice with pots. A little better way in the case of a planter is to lay a sheet of screen wire in the bottom, cut to fit. Aluminum screening won't rust; neither will plastic screening, though you may damage it accidentally with a tool.

There are small planters made of plastic, but for outdoor use the only material other than wood that we have seen much used is metal, such as aluminum. Since a metal box can get too warm for a plant, these planters often have plastic liners. Such a combination makes a much less heavy box than a wooden one.

A window box is simply a planter fastened on the side of a house, and the plastic-lined metal one we just mentioned is well worth considering for this use. If you prefer to build your own out of wood, though, make it a little shallower than the planter we have described—10 inches deep is enough—and slant the outer side so that the planter's top width is about 12 inches and the bottom width about 9 inches. This makes a better looking window box than a straight up-and-down one, and also permits the contents to expand in freezing weather without breaking the box.

The most permanent window box is one lined with copper; next choice is one of the rot-resistant woods already mentioned, and following that, the choice would be a wood treated with a preservative.

Being in the elevated spot it is, a window box must be *very*

securely fastened. Another problem—when it drips, as it will—is what or who will it be dripping on? The matter of secure fastening is critical. Empty, a wooden window box is fairly heavy; filled with earth or an earth mixture, it weighs between 50 and 100 pounds per foot of its length—a bomb if it should fall. And, naturally, the higher in the air the window box is, the more you have to think about this, so if you call a tenth-floor apartment home, take the matter up with the building superintendent. If window boxes are not off limits entirely, let the superintendent handle the whole thing for you, as he'll probably have to anyway, by law.

In your own house, the prudent thing to do is to examine some other window boxes in the neighborhood for construction details of bracing, then copy the kind you prefer, or have a carpenter do it. A properly supported window box should have its supports bolted to the framework of the house, the studding.

One way to keep down the weight of a window box is to set potted plants in it, in their pots, and surround the pots with sphagnum peat or sawdust, instead of filling the window box and planting directly in it. The sphagnum or sawdust holds water well, and releases it slowly to the pots, which reduces the chore of watering the box.

Instead of planters, tubs are chosen for holding the vine plants such as cantaloupes and squash, which need a good deal of water and a solid, heavy anchorage. Don't take the word "tub" literally. It *can* be a washtub but usually isn't. A barrel is called a tub, as is a barrel cut in half, and in general any container that holds a bushel or more is called a tub. We are growing three squash plants in a 12-gallon fiber tub this season; there are 8 gallons in a bushel, so this is a 1½-bushel size tub. A single squash plant would get along in a 5-gallon container. Our three are living happily together, are being very productive, and though the tub narrows toward the bottom and is in a windy place, the wind doesn't jostle it at all. (No wonder—filled, it weighs over 100 pounds.)

To build a tub of about this capacity, make a box 14 inches deep and measuring 15 inches along each side. Bore five ½-inch holes in the bottom, and fasten two wooden

strips to the bottom for the tub to rest on, as with a planter.

Such materials as clay and concrete are also used for tubs, but add too much weight if you want to move the tub. They make better containers for trees than for vegetables.

Plastic and metal trash cans have been used as planting tubs, after holes have been punched in the sides near the bottom for drainage, but the trouble is, they keep right on looking like trash cans. This is also true of bushel baskets—but they have become too scarce to find anyway. If you do find some and want to plant in them, line them with sheet plastic, and with a scissors cut half a dozen holes the size of a dime in the plastic at the bottom of the basket.

A new twist in tubs arrived the day someone filled a large plastic sack with a planting mixture and planted some seeds in it. These sacks, the kind that hold commercial packages of such garden products as peat moss and leafmold, accommodate two cubic feet of material, the equivalent of a 1½-bushel tub. Some gardeners half-fill a sack and stand it up. It usually needs something to lean against, for everybody's peace of mind. Another way to use a sack is to tie the open end shut after filling the sack, then lay it on one side, cut two or three 2-inch holes in the top side, and plant seed in each of these spots. Drainage can be a problem, so a workable solution is to keep the sack intact, with no drainage holes in it, and avoid overwatering.

These sack planters are no beauties, but they serve a purpose and are a way to keep the investment low while a gardener tries out container gardening to see if it is for him. There are also commercial versions of sack containers, in various sizes, filled with planting mixtures and in some cases even with the seeds already planted.

Tubs and planters that cannot easily be moved if you want to move them are a great nuisance. And remember that they weigh up to 300 pounds when filled. The moving is often done by building a wheeled platform that serves as a permanent foundation for the container. You can use heavy castors for the wheels, or get the kind of wheels used on garden carts and power mowers. The cart wheels suffer less from the drainage of the container, but we'll have to say that neither is 100 percent satisfactory. If you aren't going to

move a tub or planter often, you can omit the wheeled platform, and move the container by slipping 2-foot lengths of pipe or broomstick under it and rolling it on them. Use three such broomstick or pipe lengths.

Built-in containers are a sort of way around the moving problem, since you can't move them at all. A brick or cinder block box built against the foundation of a house or along the top of a wide retaining wall makes a good place to grow certain midget vegetables such as peppers, eggplants, and tomatoes, if there is enough sun in the spot for them.

Another built-in container that can be set up quickly on a paved or earth surface is marketed under the brand name Pyramid Terraced Garden. You are supplied with strips of corrugated metal to form three rings, one 6 feet wide, one 4 feet wide, and one 2 feet wide. Filled with soil, these rings are stacked, the 6-foot one forming the pyramid base and the 2-foot one the top, making platforms on which plants can be accommodated. Watering is done by a built-in sprinkler that sticks up out of the top of the stack, and has a hose connection. This outfit costs $10, and many seed houses carry it.

If you have a fence facing south, you can make a vertical garden by setting planters on shelves which you fasten to the fence. Keep the planters small, about 1½ feet long and up to 8 inches wide and deep. Make the shelves a little wider than the planters, and support them on steel shelf brackets or with an equivalent wooden bracing you make.

You can't feed an army with what you grow in a vertical garden but it needs only a little bit of floor space and puts it to good use. Try it with Tiny Tim tomatoes, herbs, green onions, cress, lettuce, and radishes.

Hanging baskets are another space saver. We don't like them because they are always a problem to water, and then they drip, but they have a place here and there. One way to foil the drip is to grow shallots in them, as shallots take less water than other vegetables. Some hanging baskets have drip-catching pans hanging under them. Other small crops that will do well in hanging baskets are herbs, cress, and midget cucumbers.

Before filling a wire hanging basket with a soil mixture, line it with 1 inch of sphagnum moss.

Appropriate Containers for Midget Vegetables.

Bush beans	planter
Beets	planter
Cabbage	planter
Cantaloupes	tub
Carrots	planter, or several in pot
Celery	planter, or one per 6-inch pot
Chard	planter, or one per 6-inch pot
Chives	pot
Corn	large planter (hand-pollinate silks)
Cress	planter or pot
Cucumbers	planter or tub
Eggplants	planter, or one per 10-inch pot
Endive	planter
Garlic	planter, or three in 8-inch pot
Herbs	planter or pots
Kale	planter
Lettuce	planter
Marigolds	planter, or one per 8-inch pot (4-inch for French marigolds)
Mustard	planter
Okra	planter
Onions, green	planter, or several in 6-inch pot
Peas	planter (trellis for sugar peas)
Peppers	planter, or one per 10-inch pot
Pumpkins	tub
Radishes	planter, or several in pot
Shallots	planter, or one per 6-inch pot
Spinach	planter
Squash	tub
Strawberries	planter, or one per 6-inch pot
Tomatoes	planter, tub, or pots (6-inch for smallest)
Turnips	planter
Watermelons	tub

Soil for containers. If you have some compost to put into your soil mixture, we highly recommend using it. Vegetables growing in containers are in an artificial environment, and making compost available to them helps greatly to swing the balance back toward natural growing conditions. In Chapter 2 we gave a method of making compost in a can, a method suitable for container-gardening. However, we realize that making compost, or getting it from someone who does, is out of the question for some city gardeners. For them we give below an alternative planting mixture that uses no compost but that has been well tested and will grow a good container garden.

Both these mixtures, the compost one and the no-compost alternative include some earth. "Loam," or "garden soil" is usually specified for this purpose. Do the best you can—garden soil if you can get it, any soil if you can't. If you aren't going to need much soil, ask your garden supplier for "all-purpose potting soil" or for African violet soil. These contain earth, and are not the same as commercial potting mixtures which consist of vermiculite or perlite, sphagnum moss, and nitrogen-phosphorus-potash-calcium-magnesium fertilizers—suitable for starting plants, but not for growing vegetables to maturity unless you supply them with the other nutrients that plants require, which we discussed in Chapter 2. Earth almost always contains these nutrients, and this is the best way of balancing your container-garden's diet.

Before filling containers with a planting mixture, soak clay pots in water for at least an hour. Then, for all containers, cover drainage holes loosely with pieces of broken clay pots, charcoal, a stone, or something of the kind, the object being to keep the planting mixture from sifting through the holes but not to close them so tightly that excess water cannot drain off. Next, lay down a layer of vermiculite or perlite 1 to 2 inches deep. This is to hold moisture, both for the plants to use and to reduce dripping. A layer of sphagnum moss will do the same thing. So, to some extent, will a layer of charcoal, and it will also add a little nutrient value; for this you can use the briquettes sold for making charcoal fires in grills; break the briquettes up a little first, with a hammer.

COMPOST MIXTURE FOR CONTAINERS

These amounts will make a bushel of planting mixture. A 1-pound coffee can holds about a quart and makes a convenient measure, four canfuls making one gallon.

The compost must be well decomposed, dark and crumbly. Remove any coarse material in it, but you need not screen the compost.

You will need:

3 gallons of earth
3 gallons of compost
2 gallons of builders' sand
½ pint of cottonseed meal

To mix these ingredients, pile them in the middle of a sheet of canvas or plastic. We keep old shower curtains on hand for such jobs. Then separate the pile into four small piles. Rejoin these into a single pile again by lifting the corners of the plastic. Repeat this procedure until the ingredients are well mixed. When compost is part of a mixture like this, sprinkling the mixture with water to keep down dust is not usually needed, but the mixture should be moist enough to just barely hold its shape if you pick up a handful and squeeze it. If not, add a little water.

NO-COMPOST MIXTURE FOR CONTAINERS

These amounts will make a bushel of planting mixture. You will need:

4 gallons of earth
1½ gallons of sphagnum moss
1½ gallons of builders' sand
1 gallon of dried cattle manure
1 pint of cottonseed meal

The procedure for mixing is the same as with the other mixture, but start by soaking the sphagnum moss in hot water. You will probably have to add more water as you mix the ingredients, in two or three wettings.

You can substitute sawdust, preferably rotted, for the sphagnum moss. The dried cattle manure is sold by garden suppliers.

If your vegetables grow well and have no disease problems, either of these mixtures can be used again the next season. To do so, remove the mixture from the containers, break it up on a shower curtain, as it will be held together by a lot of roots, and to each bushel of it add as follows:

To the compost mixture, about 1½ gallons of fresh compost and ½ pint of cottonseed meal.

To the no-compost mixture, 2 or 3 quarts of sphagnum moss and one pint of cottonseed meal.

We will add this, however: For container gardening, a fresh mixture each season is better practice, with the old mixture going into the compost heap for recycling, if you are able to run a compost heap.

Fertilizing container plants. The planting mixtures that we have recommended are intended to supply most of your midget vegetables' long-term basic needs. In addition, to keep them growing well you will need to feed them lightly about once every two or three weeks. For this you can use either a dry fertilizer such as cottonseed meal, or a soluble fertilizer that you mix with water. Soluble fertilizers with a fish emulsion base are favored by most organic gardeners, and there are several brands of these. Some other soluble fertilizer brands are Hyponex, Liquinox, Ortho-Gro, and Ra-Pid-Gro. Some soluble fertilizers come in formulas that omit nitrogen, and these are intended for plants in the flowering or fruiting stage; they are preferred for tomatoes and peppers in their later growth.

For general fertilizing, do this: If using cottonseed meal, castor bean meal, or linseed meal, mix 1 tablespoonful into the upper ½ inch of each square foot of soil in the container every three weeks, beginning a month after plants sprout. If using a soluble fertilizer, mix it at one-half normal strength, and apply it once every two weeks in place of the usual watering at that time. An easy way to mix a half-strength solution is to double the amount of water that the normal-strength solution calls for.

Herbs are an exception to the above directions for fertilizing. Feed them only once every month or six weeks.

Watering container plants. In general, container-grown vegetables need 1 inch of water each week, just as garden vegetables do. However, containers vary in the amount of evaporation they allow, and there are other matters such as where the containers are placed, how large they are, and how much water the planting in them is using up each day. After a while you will learn to tell when your vegetables need water, partly by how they look and partly by feeling the soil with your fingers. The usual rule is: The soil should be moist 1/8 inch beneath the surface. We have let it become a little drier than this, without harm, before watering. Two waterings a week for small containers and once a week for large ones is average. In hot, dry weather we have sometimes had to double or triple this.

But too much water is really worse than too little, in container-gardening especially. It drowns the roots. One other point—try not to wet your plants' leaves if watering late in the day or in muggy weather. When leaves stay wet too long, fungus diseases can get a foothold.

If you must be away for more than a week, as on a vacation, get someone to water your plants during that time. For a one-week absence, water them thoroughly just before you leave, set them in partial shade if possible, and then have someone check on them once or twice during the week, for safety's sake.

The possible vegetables. For an outdoor container garden, any of the vegetables covered in this book are possible, provided you can give them the quantity of soil they need, as indicated in the previous list of suitable containers for each plant, and provided your location has the sun and air requirements of the plants you are growing, and your climate is right for them.

INDOOR GARDENING

Growing midget vegetables inside your home is an enthralling enterprise and adds a delicious and nutritious dividend to your dining as well as providing you with a living interior decoration, which you can be positive few if any of your friends will possess.

Many of the points made about container-planting outdoors also applies to indoors, but since a vegetable grown indoors is as much a house plant as a philodendron, there are a few differences too. (One of them is that you aren't bound hand and foot by climate and season, and with a little bit of luck you can, like our friends in the beginning of this book, harvest a tomato on Christmas Day.)

Location of plants—light, heat, ventilation. The first thing to be decided when planning to grow some midget vegetables indoors is where you're going to put them. Sometimes there isn't much choice, we realize. "It's the kitchen window sill or nothing," one gardener said flatly, and in a small apartment that may be the one and only spot. In any case there are three points to be checked on when you look for a place to grow your little vegetable garden indoors. These points are: light, heat, and ventilation.

The light is the most important point. Without light nothing except a mushroom will grow. The best window exposure for your vegetables is one facing south. An east window is the second choice, a west window, third best. If a north window is what you have, plant the leafy crops such as lettuce and cress.

You may also want to consider getting a mini-greenhouse that fits a standard window. It is like adding a 16-inch-deep bay window to your window, with plants on three levels. The greenhouse people, Lord & Burnham, offer a model that costs from $135 to $190, depending on width and height of your window.

Remember that plants reach toward the source of light, so containers at a window should be turned around now and then to keep the plants from developing a permanent warp.

Some indoor gardeners give their plants an extra dose of light, especially when the days are shorter than in summertime, by using lamplight. An ordinary light bulb in a lamp over the plants can be turned on at dusk, and burned for from 2 to 6 hours. The bulb should be 12 inches or so above the plants to avoid overheating them.

To depend entirely on this kind of light to grow vegetables indoors, however, won't work well because incandescent light doesn't have sunlight's range of light waves. Fluorescent tubes give a light nearer to sunlight's value for plants, and there now are fluorescent tubes that do a still better job for vegetables than the older ones did. The Sylvania company has done basic work in this field, and their lamp for this purpose is called the Wide Spectrum Gro-Lux. Several seed houses, Burpee and Park among them, handle this line, and a fixture that lights an area 2 feet long and 1 foot wide costs about $20. Fluorescent light is fairly cool and won't burn plants. For more consistent daily illumination, it will pay you to buy an automatic timer along with the lamp unit; cost: about $12.

Keep this in mind, however: Most of the experimenting in growing plants under lights has been done on ornamental plants, not on vegetables. Consequently you'll be doing some experimenting of your own in this still-pioneering field. One piece of sound advice we can give you is: Be generous with the light. Even vegetables that can take partial shade outdoors, lettuce for example, will need a lot of artificial light to do well. It will need something like 16 to 18 hours of it daily because artificial light is much weaker than sunlight. Your best choice, in addition to the long daily exposure under lights, is to set the fluorescent unit close to the plants—just a few inches above them. A 6-inch clearance is not too close, and some vegetables may want the tube still closer. If the plants seem too tall and leggy, it is quite possible the light source is too far away.

You'll also find that most light comes from the center of a fluorescent tube, so change the position of plants every few days to even out the amount of light each is getting.

If the room where the vegetables are growing under fluorescent light also has daylight coming in through windows or a skylight, be sure that it is also night-time outdoors when the fluorescent light is turned off to give your plants their night-time rest.

Though it will be concentrated on ornamentals, you can get further information on fluorescent-light gardening from Sylvania Lighting Center, Danvers, Massachusetts, 01923.

Heat: In hot weather you may have to shade plants growing near windows, particularly leafy crops and root vegetables. A half-closed venetian blind provides good shade, as does a temporary screen of thin cloth. Tomatoes, peppers, eggplants, and most herbs can take high temperatures, but the other vegetables at all suitable for indoor growing will do better in the 60° to 75° F. range and will not be disturbed by air conditioning—which the other crops may resent.

In cold weather, plants growing near a window may get chilled, especially at night. Space them about 12 inches from the window pane if possible, and at night a drapery pulled across the window will protect them.

Resist the temptation to put the plants near a heater, though. Too-cool is less damaging to them than too-hot. A source of heat on the other side of the room, however, will be all right if the room temperature is not too high for the plants, and will even be of some help in keeping a current of air moving.

The third requirement, **ventilation,** is tied in with temperature. Plants need some air movement, and this will do a good deal to offset too-high temperatures, if this is a problem. Ventilation also helps keep plants healthy by reducing the chance of fungus diseases. Even if you can do no more than open a window to air the room for a few minutes once a day, it will do some good. Don't let a gale blow on the plants, of course, but a breeze will be fine. Air conditioning takes care of ventilation automatically, and as we said, certain plants will thrive under it.

Containers and stands. Providing you have the room for them, the containers discussed for outdoor gardening are also suitable for growing vegetables indoors. The main difference is that indoors, you're much more aware of the excess water that drains out of the container. There are two ways you can handle this problem without resigning yourself to ruining the furniture or floor covering.

(1) You can set each container in a waterproof tray, pan, or dish to catch the drainage. This is the usual method, and the best. The container should be raised slightly from the

bottom of the tray or other vessel, as by some marbles, rocks, strips of wood, or built-in ridges. The tray should rest on a pad or it may mark the finish of whatever it is on. A magazine can serve as a pad; cork sheeting makes a good pad, and so do the 12-inch carpeting squares sold for do-it-yourself wall-to-wall covering. Don't let water stand in the tray deep enough to reach the bottom of the plant container, but a little water in the tray is a help to the plants if the humidity in your house is much below 40 percent.

(2) The other way to control drainage indoors is to use containers having no drainage holes. You must provide a 1- to 2-inch layer of pebbles, marbles, or broken charcoal at the bottom before filling the containers with soil, and then never water the plants heavily. This method was described in Chapter 1 in connection with planting seeds, and it is more satisfactory for that purpose than when dealing with more mature plants and their larger root systems.

Some kind of stand for your vegetable containers to rest on is usually needed, both to keep them out of your way and to give them the light and air they need. Tables and window sills are the most often used stands. Some gardeners use stepladders, or build stepladder-like stands to hold containers at different heights. The iron planter stands used for ornamental house plants are also appropriate for vegetables.

If the window sill is your choice, you can enlarge it by placing a wide board on it, 12 inches wide or more. A sheet of ¾-inch plywood cut to fit will do this job nicely. A pair of pole legs can support the board's inside edge, and the weight of the plant containers will anchor it to the window sill.

For one or two pots of herbs, a wall bracket makes a good stand.

A waist-high room divider with a built-in planter on top can combine container and stand. And if a fluorescent tube is installed over it, this makes an interesting attention point in a room, and permits double use of the light if the divider adjoins a kitchen work surface.

Planting mixtures. The indoor gardener is not nearly as apt to have access to earth as an outdoor gardener, and making compost is so much more conveniently done outdoors, that it

is not in the cards for many strictly indoor gardeners. Consequently, we are recommending a compromise.

For earth, get some of the all-purpose potting soil mentioned before at your garden supplier's. The mixture called African violet soil will also do, as both mixtures will include sterilized earth, sand, and some form of humus. A few seed houses carry these products, Olds' being one, but it should not be hard for you to find it locally. It is usually sold by weight, a 5-pound bag being fairly standard, and costing a dollar or so. Mix this 5 pounds of soil with enough perlite to fill a 1-pound coffee can, enough builders' sand to fill a 1-pound coffee can, and ¼ cup of cottonseed meal. Perlite is a spongy lightweight volcanic rock in pellet form and a good many garden suppliers carry it. If yours doesn't, substitute vermiculite or sphagnum moss (and soak the moss in hot water before adding it to the other ingredients).

These amounts will make about a gallon of planting mixture. To mix them, follow the directions given above for making the mixtures used outdoors, and handle the containers in the same way when filling them.

Note: Mix enough planting mixture so that you have some on hand for adding to the containers later. This is needed because of several factors—mainly some settling of the soil and some oxidation of organic matter in it. To add planting mixture, merely spoon it onto the surface among the plants until the original soil level, within ¼ to ½ inch of the container rim, is reached.

Seeding procedures were given in Chapter 1 for starting plants indoors, and these should be followed. If, however, you are seeding plants that you intend to grow under fluorescent light and then move outdoors when the weather warms up in late spring, shorten the indoor growing time by a week or two. This is because seedlings will grow faster under these indoor lighting conditions. Thus, instead of seeding them on March 1, for instance, seed them between March 8 and March 15.

Fertilizing and watering. Once the plants are growing well, feed and water them as detailed above for outdoor container-gardening. If you are growing them under the lights

you may find they need daily watering, or even twice a day for shallow containers.

If you must be away for two or three days, give your vegetables a good watering, move them out of the sun (or if under lights, raise the lights to reduce the intensity), and don't worry. They'll get along all right for that length of time, even though they may be lonesome. If you must be away for a week or longer and can't get someone to look after your indoor garden, do this: Get some cotton wicking used for lamps, or some glass wool wicks. By putting one end of a wick in a container of water, and letting the other end rest on the surface soil of a plant container, you can keep the plant in the container watered. First enclose the wick in a waterproof cover such as rubber or plastic tubing, or wrap it in sheet plastic. This system works best with the container of water at a level above the plant containers, and we've known indoor gardeners to put the whole business in the bathtub so there wouldn't be any lamentable surprises when they came home from their trip. For a general guide as to the amount of water you'll need, you can expect 1 gallon of water to moisten 5 or 6 gallons of soil for a week. Use plain water, and resist any temptation to add fertilizer to it. Tip: Make a test run of this watering system *before* you go away, while you're there to watch it operate, and correct any mistakes. A commercial version of this system, by the way, called trickle irrigation, is used on some fruit trees.

The possible vegetables. The vegetables that will give you the most for the space and the attention when grown indoors are these:

Planted in pots: chives, cress, herbs, shallots, and the smaller midget tomatoes.

Planted in planter boxes: All those that can be grown in pots, plus beets, carrots, leaf lettuce, mustard, radishes, turnips, and green onions.

Planted in tubs: peppers, eggplants, any of the midget tomatoes, cucumbers on a trellis.

Chapter 6

"But I Can't Give Up My Flowers"

On her occasional visits to our midwestern farm during its summertime garden plenty (and springtime and autumn, for that matter, as we like to keep a garden happily busy), a city friend invariably regretted having no space of her own in which to grow vegetables. Her yard grounds were devoted to flowers and shrubs. And yet . . . "Vegetables are so delicious right out of the garden. But what can I do? I can't give up my flowers."

We agreed she had a point. Her flowers were famous, her herbaceous borders a harmony. And she was just then president of her town's garden club. In good conscience she really couldn't give up her flowers. But at last we said it: "To be perfectly truthful, Lucille, you wouldn't be giving up anything, you know. You'd be *adding beauty* and a lot more, too."

The idea of a vegetable as an ornamental seems to come as a surprise to many people. But why? What of the pottery eggplants, cabbages, artichokes, that grace the credenzas of appealing homes? And those handsome and costly French tiles picturing onions and carrots and other pot-au-feu delights? Vegetables attractive? But of course.

And in today's horticultural scene two more encouragements for growing vegetables with flowers have emerged:

One is the home gardener's increasing switch-over to non-poisonous pest controls; so that now, you might say, the beet among the roses is safe from lethal doses.

And second, the plant breeder, with one eye fixed firmly on the small-yard (or even no-yard) citizen, has come up with the fine new array of midget vegetables that require so much

less room in which to grow than their standard counterparts.

Even in a large garden we plant midgets—midget carrots, for instance. Why? some ask us. Well, we like tiny carrots served whole. "Then why not pull standard varieties while they're small?" someone says. We could, but—did you know that fully matured carrots are better for you than young ones? Fact. They have, says the U.S. Department of Agriculture's *Food Yearbook*, ". . . a much deeper color, and their Vitamin A value is several times higher." The color here is a vitamin-indicator, and a single one of our Tiny Sweet or Red Apple carrots will easily top 5,000 units of Vitamin A. And these sweet, tender, red-gold little nuggets of health can make a ferny edging that any bed of flowers would be flattered to have.

Tom Thumb lettuce too, with its delightful one-to-a-serving-size heads, is made to order for bordering a flower bed. But with lettuce you can also choose non-midget kinds for mingling with your ornamentals, and here you'll find beautifully ruffled and brilliantly green varieties among the leaf lettuces, often called loose-head types, such as Grand Rapids and Oak Leaf. There's a little trick to harvesting this kind of lettuce that you may like to know, especially if your garden space is quite limited. Instead of taking the whole plant, pay your lettuces an early morning visit and gently remove only some of those bright green outside leaves, rinsing them at once and storing in the refrigerator for that day's salad. Not only does this kind of partial-harvesting make the planting last longer, but you actually get more good from your lettuce. We'll quote the *Food Yearbook* again: "The dark green leafy vegetables are notable sources of iron and calcium. The minerals are not uniformly distributed in different parts of the plant. Calcium in the outside green leaves of head lettuce is three to five times higher than in the inner leaves."

To get back to our flower-gardening friend: She warmed to our suggestion that she include some vegetables among her ornamentals the following season—and then threw us a curve. Most vegetables want at least fairly fertile soil, and soil that has been well cultivated. But Lucille had her eye on a strip of poor soil at the back of her grounds. It supported—barely—a

ground cover, and she wanted to know what vegetables to grow there while she was raising the perennial ornamentals that would be moved in a little later.

"Potatoes," we told her.

"Potatoes! But I thought you said something pretty—"

"Potato plants are. Handsome, in fact. And, just as important, they improve the soil, give it better texture so it holds more moisture."

Enticed by tales of good things to come, Lucille's husband spaded up the strip that fall, turning the ground cover under to add humus, and letting the rough upturned clods freeze and thaw all winter one of the best treatments for heavy Midwestern clay.

"I'm not superstitious, but—" said Lucille, and planted her potatoes exactly on St. Patrick's day, March 17. That was about a month before the average last spring frost date for the area, which is good timing for an early potato crop. You cut whole potatoes into chunks two or three days ahead of planting. Each chunk should have at least one "eye" and preferably up to four. Lucille worked ½ cup of cottonseed meal into each of the dishpan-size holes she dug, and then added nearly a bucket of moistened peat moss, which makes soil acid enough for potatoes. Sawdust is a good substitute. Three or four potato chunks went into each hole, eyes up, and were covered with about 4 inches of soil. She hadn't been able to find any certified seed potatoes to plant, so she used some she'd bought at the market for table use. Many gardeners do. "Certified" means guaranteed free of possible potato diseases, and is a good idea, but potato diseases aren't much of a problem in home gardens.

In less than a month our new potato farmer had a new ground cover of attractive little rosettes of thick green leaves, and about a month after that, she carefully dug around the sides of a few plants and harvested two dozen marble-sized new potatoes. She served them on toothpicks as canapes that evening after steaming them and then browning them lightly in sizzling butter. Not long ago a fashion columnist mentioned this very thing as a marvelous idea for a cocktail party, adding "I think these are called 'seed potatoes.'" The lady will have to think again.

By harvesting the potatoes one plant at a time during the next several weeks and replacing them with the new little perennials she had coming along, early June saw Lucille's ornamental border completed, the soil vastly improved, and she'd had the satisfaction of enjoying with her husband that treat which few ever know—really fresh new potatoes. Like many of gardening's happy surprises, these very fresh young potatoes are also better for you. Says our friend the *Food Yearbook*, referring to ascorbic acid (Vitamin C): "Potatoes furnish several nutrients. One is ascorbic acid . . . The highest content is in immature potatoes, which sometimes are grabbled for home use before the crop is ready to dig." (The "grabbled" made us blink, but it means just what Lucille was doing—groping for little potatoes from her plants.) "Their ascorbic value," *Yearbook* continues, "averages about 35 milligrams per 100 grams." And as to stored potatoes: "About one-fourth of the ascorbic acid is lost by the end of the first month, about one-half after three months, and two-thirds after six months." So think of *that* the next time you have a flower bed that needs soil improvement, and decide to plant a crop of Vitamin C. Many have used this soil improvement method before planting a lawn. We should add, speaking of midgets, that though there is no midget potato plant, the standard plants average a moderate 15 inches in height.

With a border planting in mind for a few flower beds, Lucille had seeded a flat with Tom Thumb lettuce about the time she had planted her potatoes, so the little lettuces were ready to go outside about a month later, when the frosts were over. "The trouble is," she said later when these charming midgets had grown unto lush green necklaces around the beds, "I can't bring myself to harvest the dear little things." But who can resist serving a perfect whole little Limestone lettuce on each salad plate? Impossible.

In the new border, where the potatoes had been, the perennials were still small enough to make room for temporary residents, so this convert to vegetable gardening put in plants of peppers and eggplant supplied by her nurseryman, and those fine full-flavored summer vegetables began ripening on the plants a little later in the season. Since

she bought plants instead of seed, Lucille had but little choice in varieties, and none were midgets. But she told us, with a mysterious smile, she had a plan to take care of this the following gardening season.

The "plan" turned out to be a sort of garden-club co-op. Lucille's vegetable flowers, if we can call them that, had not gone unnoticed by fellow club members, and a good example deserves to be imitated. So the interested members banded together in their ordering. A packet of tomato, pepper, or eggplant seed is more than one family can use. And someone especially good at starting plants indoors can raise them for everyone—in flats or in the small peat pots or blocks that go into the ground with the plant, and can be bought at a good price in quantities. Incidentally, being able to take plants to the garden, instead of seeds, which take time to grow, is a good way of making the most of garden space; use plenty of compost to keep these plants growing well and bearing flavorful vitamin-rich crops.

One of the club's new converts to vegetables-with-flowers was a rose gardener who had always loved cantaloupes and now decided that what was good for roses was bound to be good for cantaloupes. And so it was. She planted a rose-bed edging of Minnesota Midget cantaloupes, and they thrived on the compost with which she had mulched the bed as winter protection. She guided the 3-foot vines into gentle curves around the bed by pushing twigs into the ground to hold them in place. Cantaloupes are so good that it may come as a surprise to learn they are equally good for you. A half of one of these little melons contains about 3,000 units of Vitamin A and 30 milligrams of Vitamin C—a healthy and epicurean way to start breakfast.

We also saw Golden Midget watermelon being used as an edging for a bed of annuals grown for cut flowers. The little melons were just starting to turn from green to golden, the way this variety tells you it is getting ripe. In both these gardens the melons took no extra work or care to speak of, as they did well on the feeding and watering their flower companions received.

One of the more colorful plantings was on a 2-foot-wide strip of ground held by a rock retaining wall. Rhubard chard

formed a background row, and in front of it was the seldom-seen yellow Alpine strawberry Baron Solemacher. It grows from seed and also comes in a red-fruited variety. Plants grow to about 8 inches tall, with light green leaves and delicate white blossoms. The plump and pleasantly tart berries, reminiscent of the fabled wild strawberries, are small and are held well up in the air. We grow the red variety ourselves, for fun and to pot up for friends. When full of bloom and fairy-like fruits these potted plants make exquisite small presents. We like to serve the berries with caps and stems left on, to decorate a fruit cup or salad, or a dish of ice cream.

Rhubarb chard isn't a midget, but this gardener was harvesting the outer leaves as they reached about 15 inches, to keep the plants small. And chard is delicious at any stage. Crowded plants will also stay smaller. On the score of taste, we prefer white-stemmed chard, but we have a friend who felt the same way until he saw a spectacular display of rhubarb chard and poinsettias at a flower show—and he has raised and relished rhubarb chard ever since!

One of the most family-successful of these club vegetable-flower gardens was also the largest and most productive. The family's children were two grade-schoolers who had always been lukewarm about vegetables. But do-it-yourself is a great opinion changer. The house was set well back from the street on a spacious lot, and they'd always had wide flower borders glowing with color through the season. Since the back yard was given over to playground and patio, the vegetables had to go in front, and the family decided to plant the borders entirely to vegetables.

In early spring while the parents were seeding Red Apple carrots outdoors, and indoors a flat of Tom Thumb lettuce for later transplanting, the children were handed projects of planting Dwarf Gray sugar peas, Spinel beets, and Cherry Belle radishes; all have seeds large enough for inexperienced fingers to handle easily. The harvest from the peas astounded everyone. "The children would pick as much as two pounds a day," the mother said, "and since you eat the whole pod of sugar peas, that's a lot of delicious food coming in. We ate peas, gave peas away, and froze peas."

The children were fascinated by the inch-wide Spinel

beets—and, "Even Frank and I had forgotten how good a garden-fresh beet can be," the mother admitted. They mixed the beet tops with the tops of the radishes for cooking greens, and surprised the young ones into trying the novelty. They loved it.

"We hated to take the pea vines out—they weren't quite finished bearing, and the purple blossoms were as lovely as sweet peas," the mother said afterward. "But we needed the space for squash." So the pea vines went into the compost pile, which the children were in charge of. We thought this was good management. The nitrogen of pea vines makes for fast composting, and having the children do it was also good management, and educational.

The squash they planted was St. Pat scallop, not a midget but a compact enough bush type, and they planted okra, Dwarf Green Long Pod, because it gets only 2 feet tall. "And those okra blossoms!" the lady exclaimed. "Why, I'd plant okra again just for its looks."

Sweet corn was one vegetable even the children had always liked, but there was a problem. "We didn't have space in the borders for planting in a block, the way the catalog said to do," the mother explained, "so we planted two rows and when the powdery pollen formed on the tassels, we shook them over the silks." This hand-pollination worked, for they had plump 4-inch ears of corn in two months. "And our Minnesota Midget cantaloupe plant had two melons ready by then," the mother added.

One of the club members raised enough plants of several tender crops for everybody. "We have Morden Midget eggplants," the mother of the once-vegetable-haters said, "Tokyo Cross peppers, and two tomatoes—Pixie, because the plant is small and awfully tasty and fast and a good in-between size, and Tiny Tim to edge the beds; they're the children's favorites of all the vegetables they've raised."

She paused, then laughed a little. "I don't know why it surprised me to find my grocery bills were going down, but it did. This garden has been a real budget helper. And an outdoor classroom for the children, too. You learn a lot of ecology working the soil, making compost, understanding why poisonous sprays are dangerous. And the pollination and

all—it's a good healthy way to learn about sex. You know?"

Agreed. And the appeal of the midget vegetables to children is not only for their smaller sizes but also for their speedy growth, which holds a child's interest. We suggested this family give the children a treat the next year by growing peanuts. This is an easy crop to grow if you have nearly four months of summer warmth, and where is the child who doesn't like peanuts? The Spanish variety takes 110 days to mature, and the attractive dwarf bushes are very productive.

To plant peanuts, shell them carefully so you don't break the inner skin, and plant about 2 inches deep in loose or sandy soil, as soon as the ground is warm. The plant is unusual in having two separate sets of blossoms, one of them forming the peanuts by bending down and sending a shoot into the earth, where the peanuts then develop underground.

Harvest peanuts by digging up the plants just before frost, shaking off the clinging soil, and hanging them in an airy place to dry for about three weeks. Then pull off the peanuts and pile them in a box or spread them out in an attic or dry basement for another three weeks. From then on, roast them as you need them—only as many as you intend to eat right away. Because when you taste your first freshly roasted, hot peanuts, you'll be glad we recommended them to you.

To roast them, spread them in a big flat roasting pan and put them in a preheated 325 ° F. oven for about 20 minutes. The timing varies a little with the size of the nuts, so taste one to see if they're ready. They make a fine nutritional after-school snack, and a surprisingly economical delicacy for any-time nibbling.

A last word: Before leaving the vegetables-with-flowers gardens, we should mention the flowers-with-vegetables gardeners, those who companion-plant their vegetables with a few flowers. Marigolds are probably the favorite for this, and we always include some in our vegetable garden—not because we feel, as do some other organic gardeners, that marigolds are a sort of all-purpose insect repellent, but because they are cheerful growers and they do repel nematodes by means of a substance the roots give off. But we also like fall asters in the vegetable garden, and pansies, heuchera, and some other

beauties that add to the natural attractions of a happy, productive planting. And, of course, herbs. Is a herb better used in the kitchen, or in the garden for fragrance and looks? Who knows? And to us gardeners, who really cares? For, you see, we can do both.

Chapter 7

Pin Money from Your Midget Vegetables

You might not think a midget garden would produce enough to have a surplus you could sell. But these little vegetables often surprise you with how well they bear. In that case you may want to turn the surplus into money, or put it to use as barter in exchange for something you'd like to have. In our own case we find that midget vegetables are so appealing to friends, we've had to seed some extra plants, for example, just to have them on hand for gifts.

"Remember those darling little tomato plants you gave me last year? That I grew on my porch in flower pots?" one friend reminded us early one spring. "Every time we had a dinner party, everybody would go pick their own tomato appetizers to go with cocktails. Sensational!"

We took the hint, and though we hadn't planned on seeding Tiny Tims that season, we did so, and two months later the little plants were in pots, ready for pick-up. As usual, we had more plants than we needed, and when our friend saw this, she asked for them, saying she wanted to pot them as gifts for friends of hers who had been charmed by her little cocktail tomatoes the previous summer. Here obviously was a market for anyone who could supply it. Midget vegetables are still unknown to most people, and most of those who may have heard of them haven't any idea how you get them. A midget plant—tomato, for instance—already growing sturdily in a flower pot, would be as welcome as a spring bouquet, and a good deal scarcer.

We have also potted the little cucumber from New Hampshire whose vines are only 2 feet long and that starts

bearing plump little 3-inch fruits in 55 days. We put neat little curled-parsley plants and French basil in small plastic pots for epicurean cooks to grow—right in their aromatic kitchens. And have had them tell us of friends who asked where they could possibly buy such plants for themselves. Every seed house carries curled parsley, but we'll admit French basil is something else again; we used to order it from Europe, but it is now carried by Nichols in this country.

As to the midget vegetables themselves, one sales appeal is their first-of-the-season earliness. Many midgets get there so much faster than standards. And remember that these little vegetables are ripe and fully flavored—they are not small because they are underdeveloped and therefore less nutritious than if mature. The 4-inch cantaloupes, noted for sweetness and down-to-the-rind goodness are ready for the table in about 60 days, while their standard big brothers still have a month or so to go. Golden Midget watermelon takes only 65 days and its earliness certainly makes it seem golden in value. Little Midget watermelon weighs only 10 pounds, is extremely sweet, and ripens in 75 days. Start all these melon plants under Hotkaps in April and have them ready in plenty of time for the Fourth of July trade.

We know from experience that three extremely popular vegetables with women who like to do fancy canning are two of the midget carrots and the midget beet. Tiny Sweet carrot has a perfect cone shape and a deep color at its 3-inch full maturity, and Red Apple carrot has great appeal because of its solid, blocky little form and its fine flavor. Also a treasure for the home canner is Spinel beet, reaching its ping-pong ball size in about 50 days, made to order for pickled beets. The cucumber already mentioned would also be greatly appreciated by canning customers for making little whole sweet pickles.

Dwarfs whose deliciousness will do their own advertising are Dwarf Gray Sugar pea and Dwarf Green Long Pod okra. We've already said elsewhere that this sugar pea is lavishly productive, and so a surplus is almost inevitable. Every time we serve these peas to someone who has never tasted them, it is a revelation; crisp and garden-delicate, they are a vegetable few people know about, but one that almost anyone

instinctively appreciates, once he tastes them. For customers with freezers, they would be a splendid item, and they are available at only a few markets—at prices ranging up to $3 a pound, and of quality far inferior to those fresh from a garden. Fresh okra is another vegetable difficult to find in good quality at the market. But, given a warm summer, it grows most productively in the home garden and is a pretty plant, too. Dwarf Green Long Pod, topping off at about 2 feet, starts giving you succulent pods in about 50 days, and then goes on and on.

The first-of-the-season vine-ripened tomato always seems the peak of perfection, and the new Pixie hybrid tomato is not only ready 52 days after the plant is set out (or put in a pot), but has the luscious flavor of a big tomato. The plant grows a modest 14 to 18 inches tall and each produces a great many tomatoes for those early-summer appetites.

Sweet corn in a mere 2 months? Yes. Golden Midget's 2- to 3-foot stalks produce delightful 4-inch ears in that time. Let your customers know you can have these ready for their coming patio party and you won't be able to keep up with the orders. One rather sedate seed house grows lyrical about this little golden corn: "Acclaimed the sweetest, tenderest, most flavorful corn ever grown!" And all this in a mere 2 months.

Then, in time to round out the season at Halloween, there is midget Cinderella pumpkin, which grows 10-inch-wide pumpkins for Jack-o-lanterns and then goes into delicious pies. Cinderella needs only a little garden space, too.

The "carriage trade" food stores, as they were once called—those that take telephone orders, deliver, and carry charge accounts—are always searching for specialties they can offer their customers. Here, the first-of-the-season produce fetches premium prices, as does the unusual—Tom Thumb lettuces for individual salad servings, little silver-dollar-size St. Pat scallop squashes, and the rarely seen Nosegay pepper, perfect for a relish tray. These markets often have many customers among higher-income couples who want just enough to serve two. The miniature cantaloupes that provide two servings and no leftovers have great appeal, as do the midget watermelons, with the added convenience of easy

storage in a small refrigerator. Here, too, are the customers for such gourmet items as the Spinel beet and Sucram carrot, both bred in Europe for epicurean tastes. So be sure to let any quality market in your community know you can supply these fancy vegetables, and tell them the approximate dates you can have them ready.

For anyone with a larger garden who is already supplying markets or selling from his own roadside stand, the midget vegetables can attract a lot of good word-of-mouth publicity. And they are so new and so charming, your local newspaper or broadcasting station might be interested in doing a feature on them. Take the management some samples, and see.

Chapter 8

Cooking The Midget Vegetables

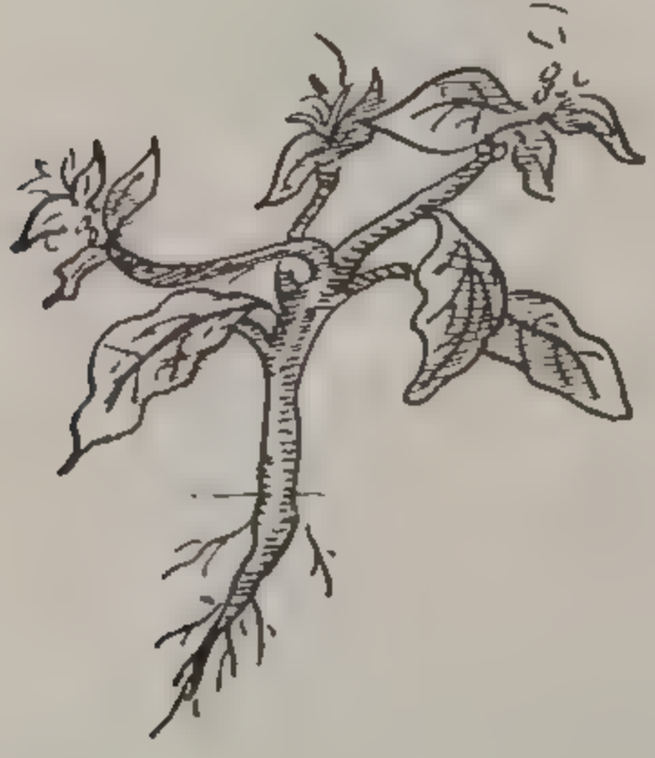
Here is a selection of 25 of our own recipes for vegetables from the midget garden. We hope you'll try the recipes, and we think you'll like them. In some cases, midget vegetables cook more quickly than standard ones, and this shorter cooking time is even more true with garden-fresh vegetables. To this attraction is often added the appeal of the miniature on the table, and also its just-right serving size.

SAVORY SPINEL BEETS

12 Spinel beets
2 tablespoons butter
1 teaspoon wine vinegar
¼ teaspoon allspice
¼ teaspoon sugar
salt

Cut off leaves of beets (and save them, as they are an excellent cooking green) and all but 1 inch of stems. Do not trim off any roots. Wash beets, then simmer in water in covered saucepan about 10 minutes, until a toothpick will easily pierce them. Drain, rinse in cold water, and slip off the skins.

Put the other ingredients in saucepan and cook briefly, stirring, until blended. Add beets, cover pan, simmer for 5 minutes over medium heat. Serves 4.

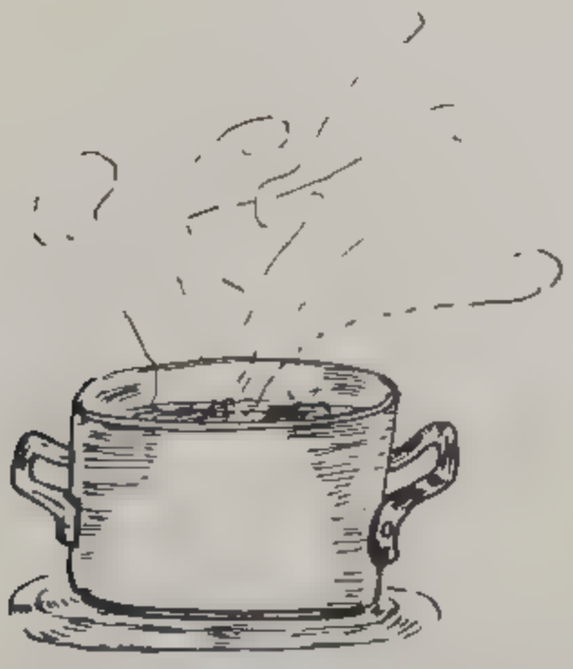


PICKLED SPINEL BEETS

Well grown Spinel beets are richly flavored and colored, making particularly attractive pickled beets. Save the tops for cooking greens, and precook the beets as in the previous recipe.

- 3 pints of cooked Spinel beets
- 1 cup sugar
- 1 teaspoon whole allspice
- ½ teaspoon salt
- 1 piece of stick cinnamon
- 1½ cups vinegar
- 1 cup water

Pack beets in hot, tall pint jars, leaving ½ inch of head space. Put the rest of the ingredients in a saucepan and make a syrup by simmering them for 15 minutes. Remove the stick cinnamon, bring the syrup to a rolling boil and pour it immediately over the beets, leaving ½ inch of head space in each jar. Adjust jar caps and process jars for 30 minutes in boiling-water bath. Yields 3 pints.



CABBAGE HORS D'OEUVRES HOLDER

You can cook a midget cabbage any way you cook large cabbages, but since the midgets are special, we like to give them special attention—as in this recipe and the ones that follow.

1 Junior midget cabbage (1½ pounds)
Carrot sticks
Cucumber fingers
Sliced celery hearts
Midget tomatoes with caps left on
Small radishes with trimmed tops left on
Parsley or cress

Wash cabbage under running water. Trim a little off the bottom so the head will stand firmly on a plate. Don't remove any outside leaves unless they are not perfect. Then gently curl outside leaves until the head resembles a large rose, treating each leaf as a petal. Ream out center of head with a sharp knife to form a bowl.

Store cabbage and all other vegetables several hours in the refrigerator to chill.

To serve, place cabbage head on plate, fill cabbage with carrot sticks, cucumber fingers, and celery hearts. Arrange the parsley or cress on the plate as a wreath around the cabbage-bowl, and decorate this wreath with the radishes and tomatoes. A dip can be served, but we find that the garden-fresh flavors need no embellishment. Save the cabbage-bowl and the cut-out center to make Midget Cabbage with Sour Cream, from the recipe that follows shortly.

INDIVIDUAL STUFFED PEE WEE CABBAGES

Serve these beautiful little cabbages on a platter, surrounded with a garnish of emerald-green parsley. Serve them to an Irish friend and you'll undoubtedly receive an Irish blessing. The recipe calls for corned beef hash, so we give below the recipe we use for this.

4 Pee Wee midget cabbages (½ pound each)
Corned beef hash to fill scooped-out cabbages
Buttered bread crumbs

Wash cabbages under running water, and trim a little off the bottoms to make them stand firmly. Remove no outside leaves unless they are imperfect. Steam cabbages in large pot until just barely tender. Carefully cut out centers, to form bowls. Fill with the corned beef hash, sprinkle buttered crumbs on top, put in buttered baking pan and bake about 15 minutes at 400 ° F. Serves 4.

CORNED BEEF HASH

1 large onion, chopped
¼ cup clarified bacon fat
2 cups freshly cooked corned beef cut in cubes
2 cups boiled potatoes cut in cubes
Horse-radish sauce to taste
Beef stock to moisten

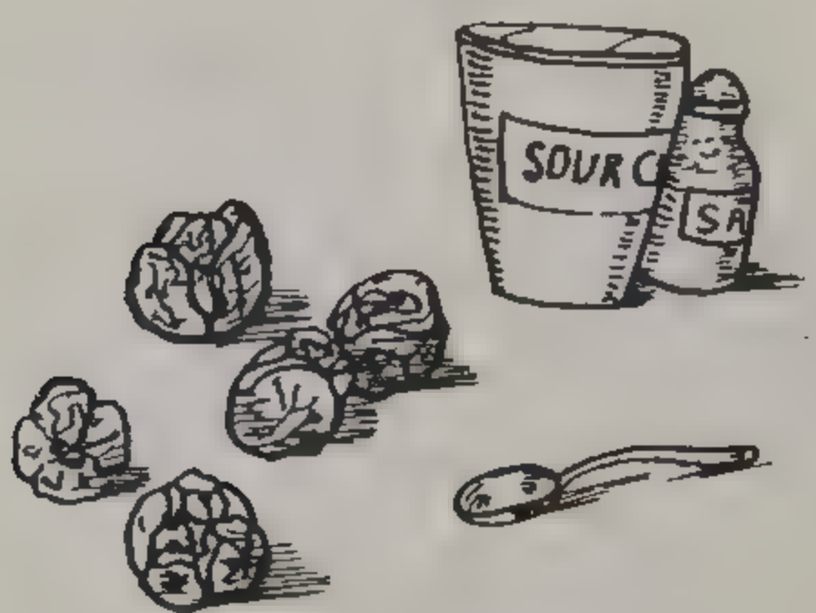
Sauté onion in a skillet in the clarified bacon fat (to clarify, pour heated bacon drippings through strainer lined with white facial tissue). Add the rest of the ingredients, and heat, stirring gently several times to blend.

MIDGET CABBAGE WITH SOUR CREAM

This is an easy and delicious way to use the scooped-out centers of cabbage left over from the previous recipe for stuffed cabbage. If you want to substitute raw cabbage, such as the scooped-out center from the cabbage in the other recipe, increase the cooking time in the first step, with oil, to 5 minutes.

- 4 cooked Pee Wee cabbage centers
- 2 tablespoons olive oil
- Salt and pepper
- ½ cup commercial sour cream

Chop the cabbage medium-fine. Heat the olive oil in a skillet, add cabbage, cover skillet and cook over medium heat 2 to 3 minutes. Season with salt and pepper, reduce heat, stir in half of the sour cream. Cover skillet again and cook for about 5 more minutes, until cabbage is heated through but still green. Serve topped with the rest of the sour cream. Serves 4.



GLACÉ CARROTS

This is a fine way to show off the little Red Apple carrot.

- 12 Red Apple carrots
- 1 tablespoon sugar
- 2 tablespoons butter
- ½ cup water reserved from steaming carrots

Scrub carrots well, but don't peel them. Steam them until they are barely tender, plunge them into cold water, remove skins. Put them into a buttered baking dish, sprinkle sugar evenly over them, and put a small piece of butter on top of each carrot. Add the water and bake about 30 minutes at 325° F., basting several times. Serves 4.

PICKLED MIDGET CARROTS

- 18 Tiny Sweet carrots (approximately), unpeeled
- 1 stick of cinnamon
- 1 tablespoon mixed pickling spices
- 1 cup sugar
- 2 cups vinegar
- 1½ cups water
- 1 teaspoon salt

Simmer carrots in water until almost tender. Drain, rinse with cool water, slip off skins.

Tie cinnamon and mixed spices in cloth bag, add to the rest of the ingredients in a saucepan and boil for 5 minutes.

Arrange carrots in 3 hot, tall pint jars, leaving ½ inch of head space. Remove spice bag from saucepan, bring the syrup to a rolling boil and immediately pour it over carrots, leaving ½ inch of head space. Adjust jar caps, process jars for 30 minutes in boiling-water bath. Yield: 3 pints.

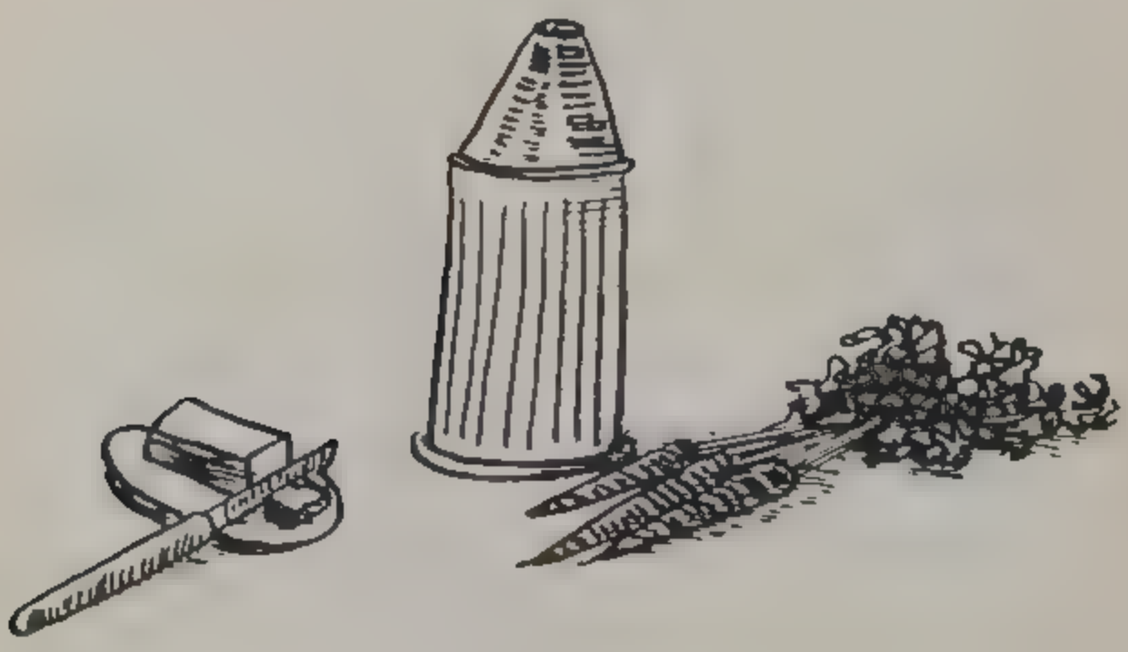
This makes an attractive pack, nice for gifts.

MARINATED TINY SWEET CARROTS

24 Tiny Sweet carrots
¼ cup olive oil
1 tablespoon lemon juice
1 tablespoon dry vermouth
Salt and pepper
½ clove of garlic
½ teaspoon sugar

Scrub carrots clean and steam them until tender, about 8 minutes. Mix the rest of the ingredients except the sugar and pour this over the carrots in a bowl. Stir them to coat each one with the mixture. Cover the bowl and allow carrots to marinate for 2 hours or longer. Transfer contents of bowl to a skillet, sprinkle carrots with the sugar, and heat gently, stirring now and then, until carrots are warmed through. Serves 4.

This dish can also be chilled after marinating, and served as a salad instead of as a hot dish.



MIDGET ROASTING EARS

Midget sweet corn is much too delicious when roasted on the ear to do anything else with it. These little ears cook fast, you'll find.

To roast them, strip off all husks except the ones next to the kernels. Then pull these back temporarily to remove the silks, and smooth the husks back in place.

Lay the ears side by side in a roasting pan and put them in a preheated 375° F. oven for 10 minutes. Serve them buttered and lightly salted.

If you prefer a moister roasting ear, wrap each in foil before roasting.

STUFFED MORDEN MIDGET EGGPLANT

- 1 Morden Midget eggplant
- ¼ cup olive oil
- 1 tablespoon butter
- 1 cup chopped mushrooms
- 2 chopped green onions
- Salt and pepper
- 1 teaspoon finely chopped fresh thyme
- 2 mushroom caps
- Melted butter

Cut eggplant in half lengthwise without removing stem end. Scoop out pulp from each half, leaving ¼ inch of shell.

Chop pulp coarsely. Heat oil and butter in saucepan, add chopped pulp, mushrooms, and onions. Cook over medium heat for 5 minutes. Season with salt, pepper, and thyme. Refill shells with this mixture and put them in a shallow baking pan. Top the filling of each shell with a mushroom cap brushed with melted butter. Bake for 10 minutes at 400°F. or till heated through. Serves 2.

SMALL-GARDEN MIXED GREENS

- 2 tablespoons butter, bacon drippings, or sausage drippings
- 2 cups chopped chard
- ½ cup chopped radish tops
- 1 cup chopped beet tops
- ½ cup chopped turnip tops
- Salt

Melt fat, add the freshly rinsed greens, salt to taste, stir well, cook covered over medium-low heat until tender, 5 to 10 minutes. No liquid need be added, as the water clinging to the greens will steam-cook them.

The assortment above is just a suggestion. It is sensible to use everything a small garden produces, and by mixing various leafy greens you nearly always can count on enough for a good serving. Outside leaves of lettuce are good additions, as are small and tender broccoli leaves. And greens bought at the market can be improved by the addition of even a few freshly picked greens from the garden.

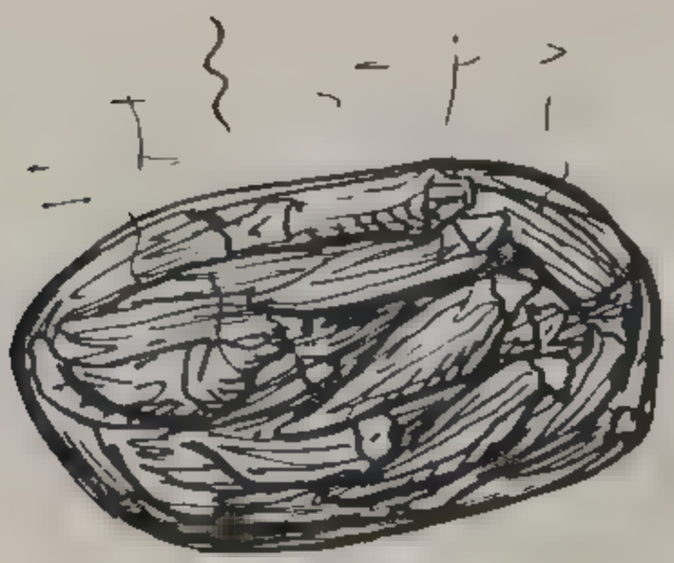
Caution: Don't use rhubarb leaves for greens, by the way. They are poisonous, only the stalks being edible.

CRISP OKRA

This is a never-fail recipe for changing the minds of those who say they don't like okra. It makes a splendid dish to serve with a vegetable meal, and is excellent with broiled fish. See the corned beef hash recipe previously given, for the method used to clarify bacon fat.

24 tender young okra pods (approximately)
Cornmeal
¼ cup clarified bacon fat (approximately)
Salt

Rinse okra, cut off tops, cut pods in half lengthwise. Roll them in cornmeal until they are evenly coated. Heat fat in heavy skillet, put okra pods in it, cut sides down, and cook until lightly brown. Turn pods and continue cooking until they are tender. Add more drippings if necessary. Salt okra and serve. Serves 4.

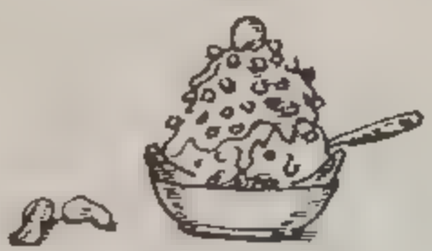


PEANUT BUTTER

This recipe and the one that follows are both good and simple enough for young gardeners who have grown a successful crop of peanuts.

- 2 cups of just-roasted peanuts
- 2 tablespoons vegetable oil (optional)
- Salt

Roast the peanuts as told in Chapter 6. Shell them then, but leave the inner skin on. If using oil, put it in the blender first, then add peanuts and salt to taste. The longer the blending, the smoother the consistency, so time it according to your preference for chunky or smooth peanut butter. Stop the blender now and then during the process, and with a rubber spatula keep the mixture scraped down from the sides of the blender jar.



PEANUT BRITTLE

- 2 cups sugar
- 1 cup coarsely chopped, just-roasted peanuts
- ½ teaspoon salt
- butter

Put sugar in a heavy skillet over low heat. Stir it until sugar is melted and golden brown. Remove from heat, add peanuts and salt, and stir very carefully, only until peanuts are well distributed. Pour into a well buttered, large flat baking pan, and cool. When cold, break into pieces.

To make a good ice cream topping, pound up some of the brittle with a mortar and pestle, or put it between two bread boards and tap with a hammer.

SIMPLE SNOW PEAS

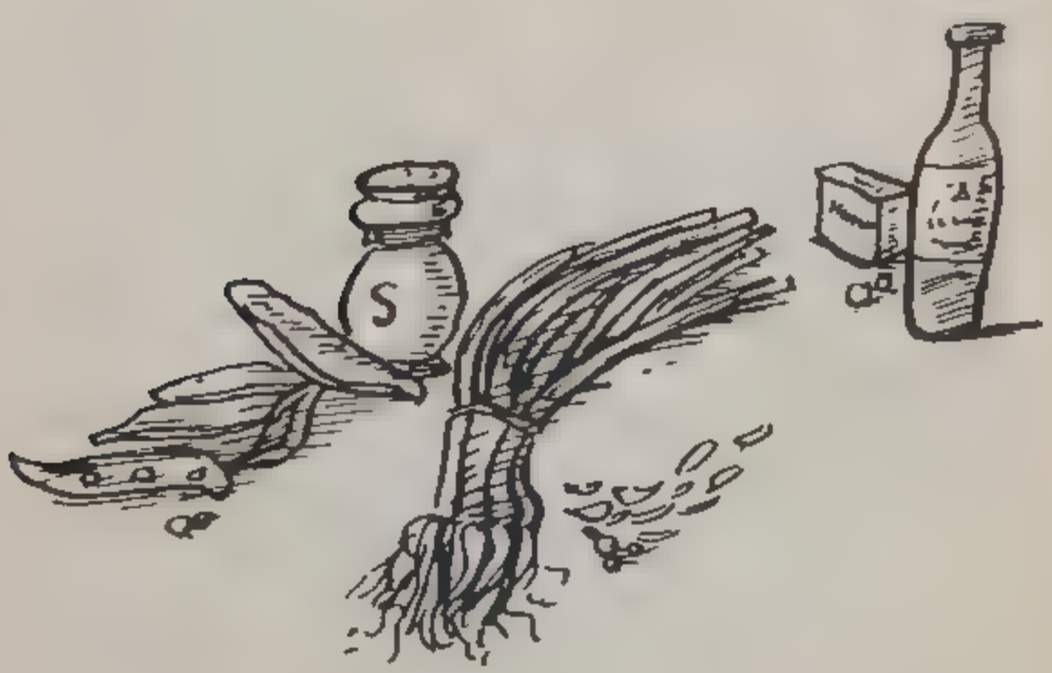
1 pound Dwarf Gray Sugar peas
1 quart vegetable stock
2 tablespoons butter
½ teaspoon sugar
Salt

Remove stem ends from peas, and cut pods into 2 or 3 pieces. Bring stock to a boil, add peas, simmer till tender, about 10 minutes. Drain, add other ingredients to the peas, cook over medium-low heat, stirring, until butter is melted. Serves 4.

SNOW PEAS ORIENTAL

- 1 pound Dwarf Gray Sugar peas
- ¼ cup chicken stock
- 4 chopped green onions
- Salt and pepper
- ½ teaspoon dry mustard
- 2 tablespoons soy sauce
- ¼ cup slivered almonds
- 1 teaspoon soya oil

Remove stem ends from peas and cut pods into ½-inch pieces. Heat stock in skillet, add peas, cover and cook 10 minutes over medium-low heat. Add onions, salt and pepper, and the mustard dissolved in the soy sauce. Turn up heat and cook, stirring, until liquid slightly thickens. Serve sprinkled with the almonds simmered briefly in the soya oil. Serves 4.



SWEET PEPPERS ROASTED

6 ripe red peppers (or 16 to 24 Pinocchio peppers)
1/3 cup olive oil
Garlic clove
French salad dressing

Cut peppers in quarters (cut Pinocchios in half), and remove stems, seeds and interior partitions. Spread on foil in shallow pan. Sprinkle with oil, in which the garlic clove has been left overnight and then discarded. Roast peppers for 30 minutes in preheated 450° F. oven. Remove them to serving dish, spoon the salad dressing over them, and serve at once. Serves 4.

AFTER-HALLOWEEN PUMPKIN PIE

- 1 1/2 cups cooked pumpkin (recipe below)
- 1 1/2 cups *rich* milk
- 1/2 cup sugar
- 1/2 teaspoon salt
- 1 teaspoon cinnamon
- 1/2 teaspoon ginger
- 1/8 teaspoon ground cloves
- 1/2 cup molasses
- 3 eggs, slightly beaten
- 3 tablespoons brandy
- 1 9-inch baked pie shell
- 1 cup heavy whipping cream

Combine cooked pumpkin, milk, sugar, seasonings, molasses, and eggs in top of double boiler, and cook, stirring, over simmering water until mixture is a good custard consistency. Cool, add brandy, and stir well. Fill the pie shell and store in refrigerator 2 hours or more. To serve, whip the cream and top the pie with it.

Note: We use whole Jersey milk for this pumpkin custard, but a good substitute is evaporated canned milk.

COOKED PUMPKIN

Cut pumpkin in half and scoop out seeds and strings. Cover cut ends of pumpkin halves with foil, and bake at 325° F. until quite tender. Remove pulp from shell and put it through a ricer or blender.

You can use a winter squash instead of pumpkin for a pie, if you like. Gold Nugget or Eat-All would be good choices.

BAKED GOLD NUGGET SQUASH

1 Gold Nugget squash
4 tablespoons butter
Salt
2 tablespoons cream sherry

Split squash lengthwise and scoop out seeds and stringy pulp. Put 1 tablespoon of butter in the cavity of each half, salt lightly, cover with foil, and bake in shallow pan 60 minutes at 375° F. Remove foil, put 1 tablespoon sherry and 1 tablespoon more of butter in each half, and bake uncovered for 30 minutes longer or until fork-tender. Serves 2.

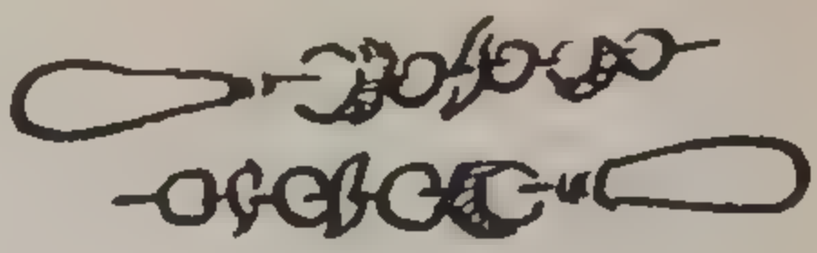
ZUCCHINI FRITTATA

- 4 zucchini squash (2 cups)
- 2 cups chopped fresh tomatoes
- 4 green onions, chopped
- 1 garlic clove
- 4 eggs
- 2 tablespoons cream
- Salt and pepper
- 2 tablespoons fresh minced basil
- 4 tablespoons fresh minced parsley
- 2 tablespoons olive oil
- 4 tablespoons butter, melted
- ½ cup freshly grated Romano cheese

Thinly slice the zucchinis, combine with tomatoes, onions, and garlic, and cook in skillet over medium heat for 8 minutes. Cool, and remove garlic if wished. Put vegetables aside while you beat eggs and cream together lightly. Stir salt, pepper, and herbs into egg mixture, blend this with the cooled vegetables, and put all into skillet in which the olive oil is heating. Cover skillet and cook slowly for 10 minutes. Then baste with the melted butter, sprinkle with the grated cheese, and slide under broiler until cheese melts and turns golden. Serves 4.

SHISHKABOB APPETIZERS

Cut Tiny Tim tomatoes in halves, and salt lightly. On toothpicks, spear two halves with a ½-inch square of broiled bacon between them.



INDIVIDUAL TOMATO-AVOCADO SALADS

Cut avocado in half, remove seed. With spoon, enlarge avocado cavity, carefully scooping out some of the flesh. Mash this removed flesh, salt lightly, and stir it into an equal amount of French salad dressing. Fill avocado cavity with yellow Tiny Tim tomatoes or yellow pear tomatoes, cut in half. Spoon over them the avocado-dressing mixture, chill, and serve. Serves 2.

ROASTED CHERRY TOMATOES

2 cups cherry tomatoes
2 tablespoons olive oil
Salt and pepper
2 tablespoons finely chopped parsley
¼ cup grated Parmesan cheese

Roll tomatoes in the olive oil to coat them all over. Put into shallow baking dish, sprinkle with salt and pepper, bake 10 to 12 minutes at 400° F. Sprinkle with parsley and cheese, and serve at once. Serves 4.

PRESTO TURNIPS IN WINE SAUCE

12 Presto turnips
Vegetable stock
1 tablespoon butter
½ cup light cream
¼ cup dry sherry
1 teaspoon honey
Salt

Peel the turnips, simmer in enough stock to cover them until they are fork-tender, about 10 minutes. Drain. Add remaining ingredients to turnips, stir while simmering for 5 minutes. Serves 4.

SUMMER GARDEN CASSEROLE

The proportions of vegetables here need not be exactly as given. If we have an abundance of one vegetable and scarcity of some other, we adjust the amounts, and we sometimes add or substitute celery for one ingredient, or do so with sweet peppers. The casserole makes a good main dish for a vegetable dinner.

- 1/4 cup olive oil
- Juice from 1 garlic clove
- 1 eggplant peeled and cut into half-inch slices
- 1 large onion, sliced
- 2 small or 1 large zucchini squash, sliced
- 4 medium (Pixie) size tomatoes, sliced
- 2 tablespoons fresh chopped basil
- Salt and pepper
- 1/3 cup freshly grated Parmesan cheese

Pour oil and garlic juice into a deep baking dish. Add a layer of eggplant, then of onions, then of zucchini, and then of tomatoes, sprinkling each layer with basil, salt, and pepper. Repeat layers until all the vegetables are used. Sprinkle the cheese on top and bake at 350° F. for 45 to 60 minutes.

Chapter 9

Where to Find What

SEED AND PLANT SUPPLIERS

Breck's of Boston, 200 Breck Building, Boston, Mass., 02210. Though Breck's lists only a few vegetables, these include several good midgets and other interesting items.

Burgess Seed & Plant Company, Galesburg, Michigan, 49053. A good listing of midgets and other vegetables appears in the bright, attractive catalog. Burgess is the only seed house we know of listing the red and yellow plum-shape, pear-shape, and cherry-shape "mini-tomatoes" mentioned in Chapter 4.

W. Atlee Burpee Company, Philadelphia, Pa., 19132; Clinton, Iowa, 52732; Riverside, California, 92502. Growing almost all its own seeds, and prominent in horticultural research, this large seed house has a good listing of midgets in its exceptionally well-done catalog, and has an extensive listing of other vegetables and garden supplies.

Cedarbrook Herb Farm, Route 1, Box 1047, Sequim, Washington, 98382. This is a small, selective nursery that mails herb plants in April, May, and June. They also carry shallots and garlic chives.

Farmer Seed and Nursery Company, Fairbault, Minn., 55021. This house is very strong in midget vegetables, keeping in close touch with experiment station developments. A good range of other novel varieties are carried also.

Henry Field Seed and Nursery Company, Shenandoah, Iowa, 51601. The extensive catalog is interesting and helpful, and includes a number of midgets.

Gurney Seed and Nursery Company, Yankton, S.D. 57078. Several midget varieties are carried, along with a good selection of other vegetables in the big, friendly catalog.

Joseph Harris Company, Moreton Farm, 3670 Buffalo Road, Rochester, N.Y., 14624. The exceptionally informative and well written catalog features a good range of varieties, including several midgets; thorough testing is the rule here.

Hemlock Hill Herb Farm, Litchfield, Conn., 06759. Perennial herb plants are the main stock in trade, some old and rare ones among them. The house also sells shallots.

Le Jardin du Gourmet, Ramsey, N.J., 07446. Herb plants and herb seeds are handled by this house, which also carries some imported vegetable seeds. Shallots are a specialty.

Earl May Seed & Nursery Company, Shenandoah, Iowa, 51601. The large, well printed catalog lists a number of good midget vegetables and a representative selection of others.

McFayden, P.O. Box 1600, Brandon, Manitoba, Canada. The selection is not large, but includes many unusual items. Being a Canadian house, there is a decided English flavor to the offerings.

Nichols Garden Nursey, 1190 North Pacific Highway, Albany, Oregon, 97321. A number of midget vegetables, some of them found only here, are handled, along with a good listing of unusual plants, and a large inventory of herbs, both seeds and plants. Shallots are also carried.

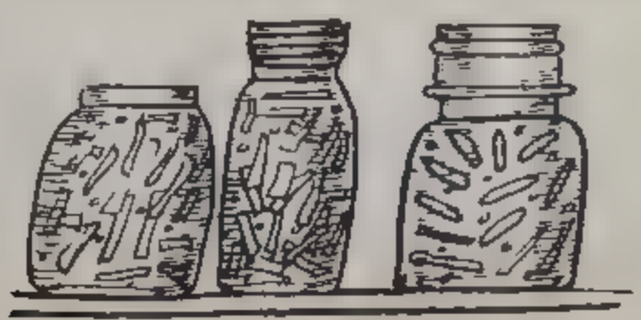
L. L. Olds Seed Company, P.O. Box 1069, 722 Williamson Street, Madison, Wisconsin, 53701. The conservative and helpful catalog lists a number of midgets and a good range of other vegetables.

George W. Park Seed Company, Greenwood, S.C., 29646. This long-established southern house handles a large selection of midget vegetables and of garden supplies. The well printed catalog has unusually good color work.

Robson Quality Seeds, Hall, N.Y., 14463. This northern house lists a few midget vegetables among its selections, and the catalog descriptions are exceptionally careful and helpful.

R. H. Shumway Seedsman, 628 Cedar Street, Rockford, Illinois, 61101. A good selection of midgets is included in a catalog with pleasantly old-fashioned illustrations and a rural-America feeling.

Stokes Seeds, Box 548, Main Post Office, Buffalo, N.Y., 14240. A northern seed house with many customers in southern Canada, Stokes is very strong in vegetable listings, and features a number of midgets, their shorter maturity time especially recommending them in the region served.



Hotkaps, paper protectors for plants outdoors. Carried by many seed houses and other garden suppliers.

Fertl-Cubes, for planting seeds in; carried by many seed houses.

Jiffy Products of America, P.O. Box 338, West Chicago, Ill., 60185. Makers of Jiffy-Pots, Jiffy-7 Peat Pellets, and Jiffy-Mix, all for planting seeds in; carried by many seed houses.

Esmay Products, Inc., Bristol, Indiana, 46507. Pyramid Terraced Garden. Many seed houses handle this product, mentioned in Chapter 5.

Lord & Burnham, Irvington-on-Hudson, N.Y., 10533, Makers of the window greenhouse mentioned in Chapter 5.

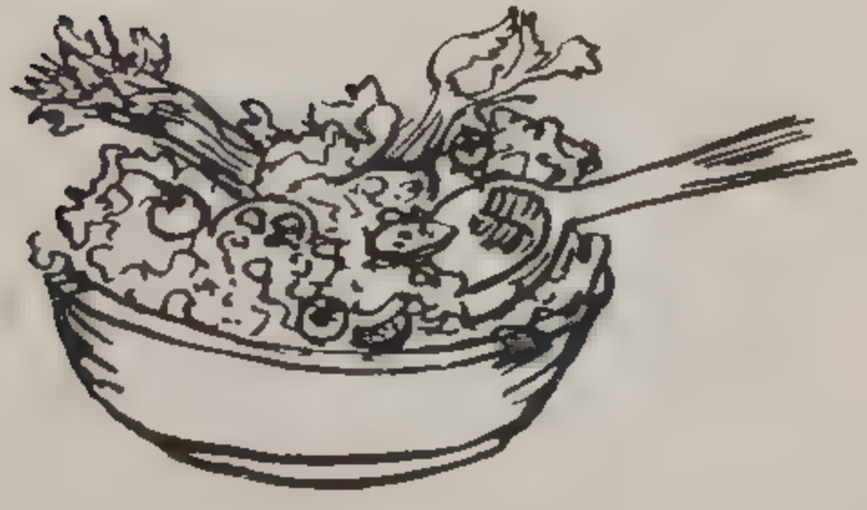
Sylvania Lighting Center, Danvers, Mass., 01923. Makers of the fluorescent lamps mentioned in Chapter 5. The product is carried by several seed houses.

Soil Analysis: Biochemical Research Laboratory, Threefold Farms, Spring Valley, N.Y., 10977. This is an organic-oriented house. For possible local laboratories, see your local phone book under "Laboratories," or talk to your county agent (listed in the phone book under county offices).

Bug Bait: A lure that attracts helpful insects to the garden. Carried by Stokes, it is made by World Garden Products, World Bldg., East Norwalk, Conn., 06855.

Bacillus Thuringiensis: This biological control of various (not all) worms, or caterpillars, is manufactured by several chemical companies, each using its own name for the product. "Thuricide" is made by International Minerals & Chemical Corporation, Libertyville, Illinois; "Biotrol" is made by Thompson-Hayward Chemical Company, P.O. Box 2383, Kansas City, Kansas; and "Dipel" is made by Abbott Laboratories, Abbott Park, North Chicago, Illinois.

Milky Spore Disease: This is the Japanese beetle biological control mentioned in Chapter 3. One trade name for it is "Doom," made by Fairfax Biological Laboratory, Clinton Corners, New York.



Glossary

A

ACID SOIL. Technically, a soil that tests lower than 7.0 on the pH scale. All vegetables do well in a slightly acid soil, and some will grow in no other. See Chapter 1.

ALKALINE SOIL. Any soil on the opposite side of the pH scale from acid soil, and testing higher than 7.0. For convenience, a soil testing 7.0 is called neutral.

ANNUAL. A plant that completes its entire life cycle from sprouting to final harvest in one season.

B

BACILLUS THURINGIENSIS. A biological (non-poisonous) control of several kinds of worms, or caterpillars, including corn earworms and the imported cabbage worm. Applied as a spray, the control works by giving the worms a fatal disease.

BALANCED FERTILIZER. A fertilizer that contains nitrogen, phosphorus, and potash, the three nutrients most apt to be in short supply in the soil. Other nutrients may also be present in a so-called balanced fertilizer.

BOLTING. Going to seed. Most head lettuces, for instance, bolt in warm weather. Bolting is considered a drawback in the home garden, as it ends a plant's useful garden life.

C

CHEMICAL FERTILIZER. This term as used by organic gardeners refers to factory-produced fertilizers not derived from plants, animals, or sedimentary deposits. Most chemical fertilizers are fast-acting, short-lived, and do not themselves improve soil structure.

CHLOROPHYLL. The green coloring matter in plants.

COLDFRAME. A bottomless box, usually with a window-like lid, used to protect plants from the weather, especially cold weather.

COMPOST. Vegetable wastes and other once-living material, broken down by bacteria and fungi into a form of humus that feeds plants and improves soil.

CULTURE. Everything done by a gardener for a plant to help it succeed.

D

DAMPING-OFF. A fungus disease that kills seedlings. They fall down and die.

E

ENZYMES. Substances that living cells make, and which play a role in effecting chemical changes, in both plants and animals.

F

FLAT. A tray-like container, used to grow plants to transplanting size.

F_1. First Generation; the term is used to identify a hybrid plant resulting from a breeder's intentional mating of two recognized varieties.

G

GERMINATE. To start growing, as when a seed sprouts. To do so, the seed needs moisture, warmth, and oxygen.

GREEN MANURING. Feeding the soil and improving its structure by spading under a cover crop such as grass or clover.

GREENSAND. An ocean deposit, greenish in color, that is rich in potash and is used as a fertilizer.

H

HARDEN-OFF. To get an indoor-grown plant accustomed to outdoor life by exposing it to the outdoors gradually.

HILL. A small circle-planting, in contrast to a row or bed planting, as in "a hill of squash."

HOTKAP. A commercial paper protector for tender young plants, usually used to shield them from springtime cold.

HUMUS. In general, any organic matter that improves soil structure and soil's water-holding ability.

HYBRID. The offspring of parents of different varieties (in animals, different breeds), and sometimes of different species. See F_1.

I

INTERPLANTING. A way to make garden space work harder, by seeding or transplanting later crops alongside vegetables that are close to harvest stage and will soon be taken out. Beans, for instance, can be seeded between lettuces in late spring.

L

LIME. A corrective for over-acid soil, derived from limestone. The effective element is calcium, also a plant nutrient.

M

MICRO-ORGANISMS. Microscopic life, bacteria and fungi, that bring about the decomposition of waste matter, producing compost.

MIDGET VEGETABLES. Vegetables bred to be smaller than others of their species, usually both in plant size and the size of edible parts.

MULCH. Any material laid on the soil in order to reduce water loss by evaporation, protect plant roots from heat and cold, and keep crops clean.

N

NITROGEN. One of the big three among soil nutrients, the others being phosphorus and potash. Nitrogen is essential to the leafy growth of plants.

NUTRIENT. Any of the sixteen known elements with which plants nourish themselves.

O

ORGANIC. Anything living or that once lived. Recently, "organic" has been used as the opposite of "chemical" or of "synthetic," as in "organic gardening."

PEAT. Partly decayed vegetative matter accumulated over centuries in bogs and forests. The kind found in bogs is the familiar spongy sphagnum peat moss. Peat found in forests is more like leafmold. Both are usually acid, and both help the soil hold moisture when they are spaded into a garden.

PEAT MOSS. Another term for peat, more correctly applied to sphagnum peat, which is formed by the decay of sphagnum mosses.

PERENNIAL. A plant that continues to live over several seasons, as compared to an annual (one season), and a biennial (two seasons).

PERLITE. An additive to potting mixtures; of volcanic origin, lightweight and water-absorbent. It is sometimes used as a lightweight substitute for sand.

pH. An index of the degree of acidity of a soil, measured by numbers on a scale.

PHOSPHORUS. A major plant nutrient, important to maturing and the production of the crop.

PHOTOSYNTHESIS. The process by which plant leaves make sugars and starches out of water and air.

PISTIL. The female organ of a flower, containing the ovule, which when joined by pollen (the male element produced by the stamens), grows the seeds to produce the next generation.

POLLINATE. The start of the reproductive process in plants. See **Pistil.**

POTASH. A major plant nutrient, also called potassium, important in root and stem growth.

R

RESISTANT. Said of a plant that is bred to tolerate certain diseases that are usually crippling or fatal to the species.

ROTATION. The practice of planting a different type of crop on the same ground each year, rather than the same type, to balance the drain on plant food in the soil, and to control plant diseases. Though not always possible in the small space of a midget garden, a 4-year rotation program could look like this: 1st year, cabbage-family vegetables; 2nd year, root vegetables; 3rd year, onion-family vegetables; 4th year, leafy crops.

S

SEED BED. A finely cultivated garden area, ready to have seeds planted in it.

SEEDLING. A very young plant.

SIDE-DRESSING. A fertilizing given plants during their growth, worked into the soil alongside them.

SPECIES. A group of related varieties of plants.

SPHAGNUM MOSS. A form of peat. See **Peat.**

STAMEN. The male organ of a flower, producing pollen, the male element. When pollen reaches the ovule (the flower's female element), this is called pollination. The result is the development of seeds, often encased in a fruit, as with tomatoes and peppers.

SUBSOIL. The layer of soil under the topsoil and above the bedrock.

SUCCESSION PLANTING. Making two or more plantings of the same crop during one season. This is usually done to spread the harvest over a longer period.

T

TEXTURE. A term that refers to the structure of soil, especially as it relates to the soil's ability to be worked into a seed bed.

THINNINGS. Young plants removed from a row to make room for those left, so they can develop properly.

TOPSOIL. The surface layer of soil, of varying thickness depending on the region's history of weathering and land use. Topsoil contains most of the nutrients needed for plant growth.

V

VARIETY. One of a group of very closely related plants, all of them belonging to the same species.

VERMICULITE. An artificial planting medium derived from mica, very lightweight, and water-absorbent. Vermiculite is often a part of mixtures in which seeds are sprouted.

VOLUNTEER. A plant that has seeded itself, in contrast to one the gardener has seeded.

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GROWING MIDGET VEGETABLES AT HOME

TELLS YOU IN CLEAR,
EASY-TO-UNDERSTAND LANGUAGE

- HOW TO PLANT THEM—GROW THEM—HARVEST THEM—
- AND HOW TO MAKE COMPOST IN MIDGET-SIZED AMOUNTS.

YOU CAN GROW CHERRY-SIZED TOMATOES THAT FLOURISH IN A FLOWERPOT, A WATERMELON THAT WILL FIT INTO YOUR REFRIGERATOR, A CHARMING LITTLE TURNIP AND A PERFECT LITTLE BEET. GROW CABBAGE AND CARROTS, CHARD AND CHIVES, PEPPERS AND PUMPKINS, ONIONS AND OKRA, SPINACH AND SQUASH, PLUS MANY, MANY MORE.

GROWING MIDGET VEGETABLES AT HOME

THE FIRST COMPLETE GUIDE
TO THE NEWEST TREND IN
VEGETABLE GARDENING!

A BANTAM BANCHMONT BOOK—NEVER BEFORE PUBLISHED

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